

# The CHILDREN'S NEWSPAPER

AND CHILDREN'S PICTORIAL

The Story of the World Today for the Men and Women of Tomorrow

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## A WONDERFUL PIECE OF NEWS

### FIVE COUNTRIES BECOME ONE UNIQUE EVENT IN THE WORLD'S HISTORY

A Stirring Example to the  
Statesmen of Europe

### THREE BOATS FOR TWO SEA FRONTS

A wonderful thing has been happening in America.

While all Europe has been waiting for the United States to lend a hand in saving the Old World by establishing the League of Nations on a firm foundation, a smaller League of Nations has been set up on American soil. Five small countries have joined up in a friendly spirit and formed one large republic, with a single president and a single parliament, and a single army and navy. Such a thing has never been heard of in history.

This is astonishing as an example of sane statesmanship, for it has taken place at the very time when Europe, with all its sad and troubled history behind it, is breaking up into an almost innumerable host of little States.

#### People Who Know the Truth

Countries are exactly like businesses in this, that one large country can be run much more efficiently and economically than a number of small ones; and the five republics of Central America, although their people are mostly illiterate, have realised the soundness of this truth. With a magnificent breadth of view and a splendid sacrifice of differences they have come together, and thrown in their lot with one another so as to form the single republic of Central America.

These are the five countries, with their populations and areas in square miles:

	POPULATION	SQ. MILES
Guatemala	2,000,000	48,290
Salvador	1,300,000	13,183
Nicaragua	800,000	49,200
Honduras	600,000	44,275
Costa Rica	460,000	23,000

The new State has thus a population of over five millions and an area of nearly 180,000 square miles—about as big as Italy or Spain.

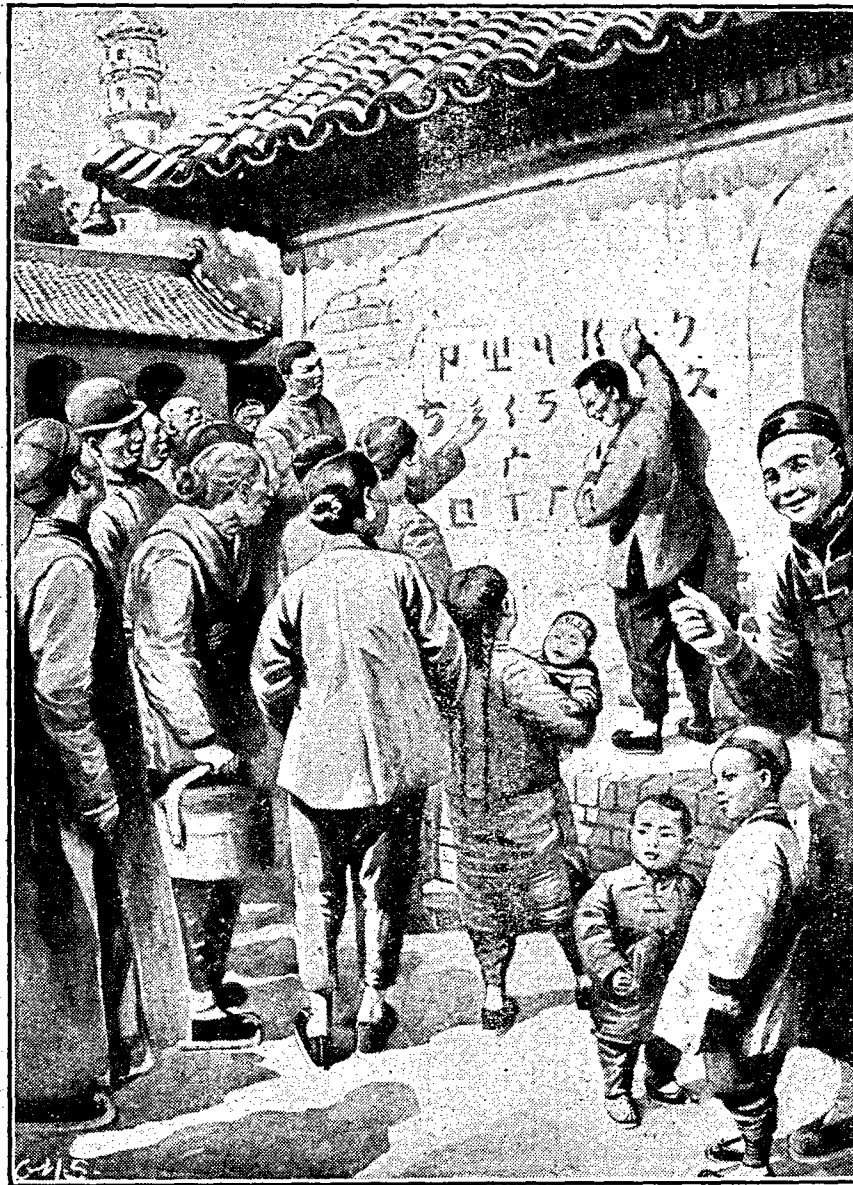
#### Reducing the Armaments

There are in the new country about 30,000 miles of telegraphs, of which half is contributed by Costa Rica; and the telephone lines are about 4300 miles, of which half are in Guatemala.

Each small republic formerly maintained a considerable army, but now the five armies become one and the numbers can be greatly reduced, with a corresponding saving in taxation.

But the most curious thing about the new country is its navy, which is a great example to the rest of the world. Two-thirds of the vessels are contributed by Costa Rica, and the remaining third by Nicaragua. It consists altogether of three small craft! Costa

### The New Power Rising in the East



All China is excited over the new alphabet that has been invented, enabling the most illiterate Chinese to learn to read and write in a few hours. Throughout China the amazing spectacle is seen of men and women and children learning to read for the first time. In many of the villages the teachers are boys and girls, and scenes like this are familiar in the streets. See page 2

Rica has two tiny motor-launches, one on the Atlantic and one on the Pacific, while Nicaragua has a single small boat on the Pacific, capable of holding a machine-gun and 25 men. These now constitute the navy of the republic of Central America, which has a sea-front on both the Atlantic and the Pacific.

This union is not merely an alliance. The five countries are absolutely federated into one independent State. Never before has such a thing occurred in the history of the world. When the various British colonies in North America combined to form the United States they were all fellow subjects of one race; but here are five countries that have been independent States for nearly a century sinking their separate nationalities for the common good. And they have done it in peace, and not by war. It is an object lesson for the world, and particularly for distracted Europe.

The agreement between the nations, signed at San José, the capital of Costa

Rica, early this year, after about six weeks' discussion, has now been ratified by all the States, and it runs thus:

The republics of Guatemala, Salvador, Honduras, and Costa Rica will unite in a perpetual and indissoluble union, and will henceforth constitute a sovereign and independent nation called the Federation of Central America.

The absence of the name of Nicaragua is explained by the fact that, owing to her treaties with the United States, she was not free at first to join up. But the United States has, of course, blessed the union of the republics, and the other four States having declared that whenever she could come in she would be welcomed, Nicaragua applied for admission as soon as she was free, and became part of the new republic.

So the map of the world has once more been altered—this time in a splendid cause. Verily, we live in stirring times. While there is much to disturb us, great events are always in the making.

### WIRELESS TO BE MADE STORM-PROOF

#### NEW MARCONI FEAT

Abolishing the Interference of  
the Atmosphere

#### HOW IT IS DONE

By a Wireless Expert

Of the two great problems which still face the wireless inventor Senator Marconi has just solved one.

Wireless messages, especially over long distances, are very apt to be interfered with by the strange signals of Nature known as "atmospherics." These signals produce noises in the listening telephone of the wireless receiver, and, though quite unlike human speech or Morse code, they are powerful enough very often to jumble up coherent messages and spoil their meaning.

The abolition of these atmospheric noises is the new Marconi achievement. The other problem, that of directing a wireless message so that it proceeds straight to the person communicated with instead of radiating out in a thousand directions, is believed to be practically solved, and will mark another big advance in wireless science.

#### Noises in the Telephone

The strange atmospheric signals, familiar to everybody who has a wireless apparatus, are the bugbear of the long-distance station. Whether they are caused by thunderstorms, or discharges of electricity from the upper air, or by the evaporation of the sea, is not known.

The noises they produce in the telephone with which the wireless operator is listening for signals are often sufficient to render a message quite meaningless, or so jumbled up that a repetition of the message is necessary, with very costly loss of time.

In simple language, Senator Marconi has invented an electrical filter, an apparatus that allows signals of a certain wave-length to pass through to the receiver, but destroys stray signals not produced by a wireless transmitter.

#### Keeping Back the Chaff

It may be compared with a threshing-machine—an apparatus that allows the wheat grain to pass, but holds back the chaff. The wheat grains are the regular signals; the chaff represents the weird hisses and sizzles produced in the telephone by atmospheric discharges of electricity.

The great importance of this new discovery, which is to be immediately applied to English long-distance stations, is that it will render all wireless messages so distinct that misunderstanding and the constant need for repetition are done away with. Telegraphic work by wireless will be surer, quicker, and therefore cheaper. It will probably make it possible to send wireless messages over still greater distances, so that from London we shall be able to communicate with the most distant Dominion.



## FOUR MEN ROUND A CAMP FIRE

HAPPY DAY IN MARYLAND

Why Mr. Edison Went to Sleep  
During the Sermon

### HOW GOD DECIDED FOR ABRAHAM LINCOLN

Is there a Boy Scout anywhere who would not have loved to turn up at Licking Creek, in Maryland, the other day? There he would have found a little camp of four men, chopping their own wood, making their own fires, cooking their own meals, and sleeping under canvas.

One was Edison, another was Henry Ford, another was Mr. Firestone, a business man whose name all America knows, and the fourth was the President of America. They form a little Camp Fire Club, just these four, and meet in camp for a few days every year.

There was a bishop there this time to preach a sermon, and we are glad that he preached on Disarmament, praising Mr. Harding for his invitation to the Governments; and, though Edison slept under a tree during the sermon, we have no reason to believe the preacher was dull, but only to remember that Edison is deaf. We are glad that this camp was held in Maryland. We like to think of Maryland, for it was there that Abraham Lincoln's resolution was fixed to free the slaves.

#### Lincoln Keeps a Promise

We read the story in the life of Lincoln, as told in the new number of My Magazine. This strange man had called together his Cabinet and, after opening it with a chapter of Artemus Ward, he told his Ministers he had come to a great decision. He told them, how, before the Battle of Antietam, he had gone on his knees in great perplexity, and, like a little child, had promised that if victory were given to the North and the enemy driven from Maryland he would take it as a sign that he was to go forward and set free all the slaves.

It is like a page from the life of Joan of Arc, but it is a page from the history of Abraham Lincoln's Cabinet. It was God who had decided this question in favour of the slaves, he told his colleagues, and he went on:

I said nothing to anyone, but I made the promise to my Maker. The rebel army is now driven out of Maryland, and I am going to fulfil my promise. I have got you together to hear what I have written down.

Then was signed the Great Emancipation; after eighteen months of defeat the North nailed the flag of Abolition to its mast, and the inner purpose of the war was made known to all mankind. The soil of the United States was dedicated to the liberty of all who live on it, black or white—to all created equal.

The tide of the war began to turn, and victory was assured.

## SAFETY IN THE PARAFFIN CAN

### A Few Drops a Day Keep Mosquitoes Away

The astonishing spell of heat and dry weather has reduced all our water supplies and brought about a condition unusually favourable to the breeding of mosquitoes.

Any puddle of water, any drain insufficiently flushed, serves as a place from which the perfect mosquito arises. There is danger in mosquitoes, and we should all be glad to help in preventing the increase of these little enemies of the human race.

The simple thing to do is to pour a few drops of paraffin into drains or puddles where the eggs may be deposited. No mosquito can hatch where paraffin is, and there is safety in the paraffin can. And paraffin (for our encouragement) is among the few things that have gone down in price.

## 400 Million People Waking Up CHINESE RACE BEGINS A NEW CAREER

Biggest Nation on Earth Learns  
Suddenly to Read and Write

### MOST AMAZING REVOLUTION OF OUR TIME

One of the greatest revolutions in the history of mankind is now beginning, and no man can say how far-reaching and momentous its results may be. It may one day lead us to the realisation of the prophecy Lord Wolseley made—that the Chinese race would rule the world.

For what is happening now is that the Chinese race, which has hitherto been unable to read and write, is learning to read and write, and equipping itself with this new power in a few hours or a few days.

The whole Chinese nation is suddenly, excitedly, mastering the power to read and write, and already a great multitude of illiterate people, who a few weeks ago could not form a single letter or understand one if they saw it, can read and write quite fluently.

It is, perhaps, the nearest thing to a miracle that has been witnessed in the history of our time, if not of any time. Hitherto ninety out of every hundred of the people of China have been illiterate, and to write was utterly beyond them.

#### Great Demand for Books

Suddenly it has become possible for the most ignorant Chinese to read and write in a few hours. All over China people of all ages are going to school, and never was there such a demand for books and papers as in that country today.

The reason for this amazing condition of things is that the Chinese have just been provided with a new alphabet, which is phonetic like our own—that is, each sign stands for a sound—and by means of 39 signs, or letters, anything in the Chinese spoken language can be written down and read with ease.

A month or two ago the C.N. monthly, My Magazine, told the romantic story of how the Red Indian chief Sequoya invented a written language for the Cherokee Indians; and exactly the same thing has been done for a whole nation of over four hundred million people. And just as the Cherokees set about learning their alphabet, and became readers and writers in a few weeks, so now the whole Chinese nation, with its teeming millions, is going to school.

#### Alphabet of 43,000 Signs

For thousands of years there has been a written language in China, but from its curious character it has been so difficult that only scholars could ever learn it, and at the age of 25 a Chinese student, even with unusual diligence, would scarcely be able to read and write as well as a British child of ten. The reason for this is the peculiar nature of the old Chinese alphabet, which is quite different from any of the alphabets of Europe.

We have 26 signs that represent sounds in English, and from these sounds the written word is built up to represent a spoken word, which stands for an idea. In Chinese there was no such alphabet until not long ago. In the old Chinese alphabet each sign represents, not a sound, but an idea, and learned men call it an ideographic language. Now, this old Chinese alphabet contains no fewer than 43,000 characters. What would happen, one wonders, if English boys and girls had to learn an alphabet of 43,000 letters before they could read the story of how Horatius held the bridge.

There are six different kinds of characters in this Chinese alphabet.

1. PICTORIAL SIGNS. These are really rough pictures representing the things they stand for. Thus, a circle with a dot is the sign for the sun, a crescent stands for the moon, and so on.

2. INDICATIVE SIGNS. The form of these suggests the ideas they are intended to represent.

3. COMPOSITE SIGNS. These are made up of two different characters to express a combined meaning. Thus, wife is denoted by writing the signs for a woman and a broom, these conveying the idea of the work a wife does in the house; the signs for eye and water are combined to represent a tear; and so on.

4. INVERTED SIGNS. These are characters written topsy-turvy to show the opposite of an idea.

5. BORROWED SIGNS. These characters are signs for other things taken, or borrowed, bodily and given a different meaning.

6. PHONETIC SIGNS. In these one part indicates the sense and the other the sound. Thus, a character known as chow, the sign for a ship, when joined with the sign for water stands for chow as meaning a ripple; joined with the sign for speech it stands for chow as meaning talkativeness; and so on. In this way there are hundreds of combinations. The sign for man, for instance, has nearly 600 combinations, all denoting something connected with man; that for tree has 900 combinations.

#### A Strange Language

But in addition to this enormous alphabet there is another difficulty which scholars find in learning the old Chinese language. In English we indicate the number and case of a noun and the tense, mood, or person of a verb by a special ending or an additional word—as in boy, boys, of a boy; come, coming, may come; and so on—but in Chinese there is nothing like this, and the exact meaning of a sentence is only indicated by the place of the different words.

With such a language only scholars could ever learn to read and write, and so it has been for thousands of years. But China has started on a new era. Her great men, realising the difficulty of educating the masses of the nation, determined to invent a simple phonetic alphabet; and a Chinese National Educational Conference, which met at Tai-yuan-fu, in Shansi, at the end of 1919, urged on the Minister of Education the need for pushing forward a phonetic system of writing.

#### Boys Become Teachers

The Chinese Board of Education at once set to work, and with the help of eminent foreign scholars, whose aid they sought, they invented the national phonetic script alphabet of 39 signs. It is really not unlike shorthand.

The help of missionaries and Christian workers all over China was invited, and they readily undertook to teach the new script, which they have done with the most amazing success. The British and Foreign Bible Society assisted by translating and printing the whole of the New Testament in the new characters. Millions of copies have been printed.

The people are all eager to learn, and astonishing scenes are witnessed. At Kaihua village boys learned to read in two days, and old illiterate women were also able in a few days to read sentences. At Kuwo an old woman of 70 learned to read and write, and then taught four young men, who in their turn became teachers.

In an out-of-the-way village in Puh-sein, where there were no slates or paper, two boys who had learned the new language from an old woman taught other people by writing on the sooty walls of a room with a piece of plaster that had fallen from the ceiling, and in a few days all the village was reading and writing.

In Chefoo the servants of the missionaries are so excited with the new power that they actually write verses on the pies and cakes they carry in for their employers' meals.

From Hsiang Cheng comes a letter:

Continued in the next column

## SCENE BY THE SEINE

Another Little Joke for  
Paris

### THE PREFECT AND THE STOLEN BOOTS

By Our Paris Correspondent

As we have seen already, Monsieur Leuillier, the French Prefect of Police, is a sort of man rather like Haroun-al-Raschid: he goes about through Paris in the night to see how his policemen do their work.

So the other night at twelve o'clock he was walking along the Seine, his hands behind his back, saying to himself that so beautiful a night should be a happy one for everybody, when he heard a cry and at the same time perceived a shadow disappearing in the water.

The Prefect hurried to the place, took off his coat, and prepared to help the poor man who had fallen down. But a young man, who also had seen the accident, preceded him and called out to Monsieur Leuillier, "Remain there and guide me; I am ready to plunge." And plunge he did. Guided by the Prefect, he reached the body and brought it back to land, and it proved to be a girl. The police then began asking questions. After the poor girl had answered their queries the turn of the rescuer came. He said his name was Gérard—all he had to say—but he improved the occasion by declaring that his boots had been stolen while he was in the river.

#### I am the Prefect

"You don't know who took them, do you?" inquired the Inspector, with a suspicious look at the Prefect. Gérard followed the look, and did not answer. Then Monsieur Leuillier was questioned.

"Who are you?"

"Monsieur Leuillier."

"Haven't you got a Christian name?"

"Yes—Robert."

"And what papers? You haven't any, have you?"

"Yes; here they are. I am the Prefect of Police!"

Then somehow everything changed at once. Policemen began to salute, military turned to the suspected Prefect, and stolen boots were no more spoken of. But Monsieur Leuillier did not forget. Having heartily complimented Gérard, he immediately gave him the value of the stolen boots. Then the good man, all wet through, slipped away home, and we heard the next morning that Gérard was generously rewarded, and a beautiful bronze was sent to Monsieur Leuillier from a society which rewards the saviors of life.

Continued from the previous column

"Mrs. Meng, an ignorant woman—wife of a poor labourer in a village—studied for ten days during the past month, and now reads quite readily. The system is spreading in all directions, all who have mastered it becoming teachers of others."

So the wonderful work goes on. In thousands of cities people of all ages are learning the new alphabet, and becoming for the first time readers and writers of their native language. Nothing like it, on such a gigantic scale, has ever happened in the history of the world before.

The movement has the full support of scholars and of the Chinese Government, which has issued an order to its officials to see that the new script is taught everywhere in schools.

It seems too amazing to be true, yet it is a fact that in a very short time practically four hundred million people will have been changed from illiterates into readers and writers.



## RICH MAN'S SEARCH FOR A FORTUNE

### GREAT ADVENTURE OF MR. FORD

How He Found Fifteen Million  
Pounds in a Few Days

#### BUYING UP A RAILWAY

We were told the other day of the latest feat of the Ford motor-car works. It turned out over 4000 cars in 24 hours. But for the extraordinary talent and exertions of Mr. Henry Ford there might have been no more cars of that name on the market. In the financial crash which overtook all trades and industries throughout the world the Ford business was involved; and Mr. Ford, in order to carry on his immense works, was compelled to find £15,000,000 hastily in the beginning of this year.

He is a rich man, yet to obtain so much money seemed impossible to anyone but himself. The great American bankers were unwilling to help except on such terms as meant his own exclusion from the business and on conditions intolerable to this gifted, self-made man. When he heard what they proposed Mr. Ford showed the bankers' spokesman to the door, and set to work to get the money himself.

#### Money Pours In

A reduction in price stimulated the sale of cars for a while; then all orders for raw materials were suspended and everything in hand was turned at full speed into cars. Next the company enforced a clause in the contracts with its agents all over the world compelling them to take a certain number of cars each month—and to pay for them. With all manner of economies practised, the company was soon in the position of taking money in and paying very little out.

There was soon a reserve of five million pounds in hand, and the new sales brought in another six. Rigorous collection of debts brought in another £750,000, and by-products yielded a million. But the final two millions could not be found simply because the railways could not take the cars out fast enough to sell and bring in the money. So, as a last daring fling, the Ford Company bought up the entire Detroit, Toledo, and Ironton Railway, which serves many Ford works.

#### Working Night and Day

Then, by giving priority of delivery to all Ford products on this railway, several thousand cars were rapidly delivered to customers, with the result that capital locked up in unsaleable goods was converted into a sum of seven million pounds.

So the great feat was accomplished, not by questionable exploits with shares and stocks, but by honest commerce and furiously active industry. The factories worked day and night to turn iron and steel into motor-cars, and the genius of Henry Ford and his associates enabled them to turn the cars into money. That is all; very simple as we tell it, but a monumental achievement in a world of trade that seems suddenly to have fallen dead.

#### In the Auction Rooms

The following prices have lately been paid in the auction rooms for objects of interest.

Worcester china dinner service	£971
A landscape by Gainsborough	£861
MS. of Burns's Tam-o'-Shanter	£500
1st edition of Shelley's Adonais	£330
3 leaves of MS. of Oliver Twist	£220
20 locks of hair of famous people	£109
1st edition of Keats's Lamia	£82
A letter written by Shelley	£80
A Jacobean needlework quilt	£79
1st edition of Frankenstein	£50
A 17th-century ale glass	£13

## RACE THAT IS LEARNING TO READ



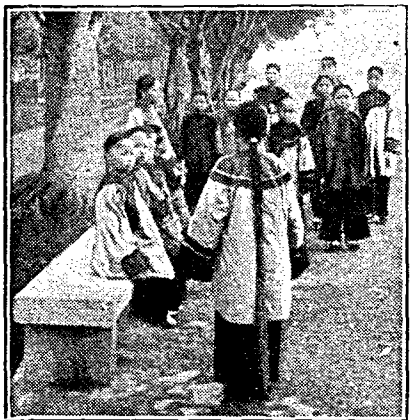
A schoolmaster with his pupil



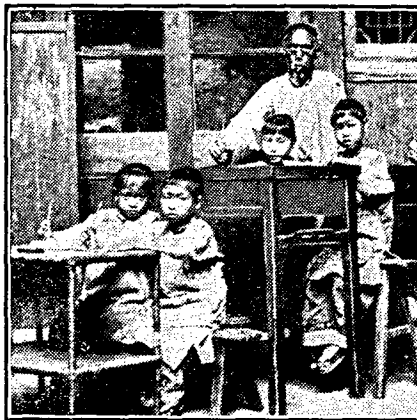
Chinese Boy Scouts



Factory girls going to work on a curious one-wheeled jaunting car



A group of Chinese girls



A native school at work



A typical street scene



A Chinaman in his grass raincoat

A new phonetic alphabet has been invented for the Chinese language, and is so simple that a Chinaman can now learn to read and write in a few hours. Everywhere old and young are eagerly taking up the new study, and before long the Chinese nation, of which ninety per cent. has been illiterate, will have become readers and writers. These photographs show types of the race that Lord Wolseley said would one day rule the world. See page 2

## SMITH

### THE HAPPY LABOURER OF JOHANNESBURG

Man Who Will Not Give Up  
Working for His Town

#### WAGES DO NOT MATTER

We should very much like to know what is happening to our friend Smith of Johannesburg—Labourer J. Smith. He seems to us a very good fellow.

He has been a labourer in the service of the Municipality of Johannesburg for 15 months without appearing on the pay-roll. When it was Smith's time to retire from the municipal service, after working in it for a large number of years, he was given a gratuity of £97 from the Provident Fund, but the next day he appeared at his job as usual and refused to go. He had always worked for the town, he explained, and always meant to.

As Smith had received a gratuity and been paid off, however, he could not re-enter the Council's service, it being against the rules; but such regulations seemed of little interest to this man with his shovel, bending over his heap of stones. He just wanted to work for the town, and to go on working for it.

#### Slow Man Who Works Quickly

He has been at it now for most of last year and most of this, and the fact that he gets no pay seems to be of no consequence to him. We take the following account of him from one of the Johannesburg papers, which says the proprietors of a garage have offered Smith six pounds a week, but Smith still makes no sign; he "wants to go on working for the town."

Pausing a moment in the middle of shovelling a heap of stones out of the trench (says a correspondent of the Johannesburg Times), Smith filled a horny paw with tobacco, and poured it slowly into the bowl of a pipe so ancient that it was burned away on one side.

He does everything slowly—everything except work. He turned a slow, questioning gaze on his interviewer, and after a long interval said, equally slowly, that he was getting on all right.

#### Working for Nothing

"But why do you go on working for nothing?" Smith turned his gaze away in pathetic vacancy, without revealing his secret. Asked when he last got any money, he said he had £2 12s. 6d. a fortnight ago, and some before that—he didn't keep no dates. But these sums were explained by other factors than the municipal pay-roll, in which Smith has not figured since 1919.

The fact is that the men with whom he comes in contact are very sympathetic toward him in the tragic fixity of purpose which has kept him in this profitless employment for so long.

"Every now and then we give him something—have a bit of a collection," said one official concerned in the works. "A few weeks ago I got him £3; and when the returned soldiers were here they had one or two collections for him."

#### Doing as Much as Six Men

But everybody concerned pays a tribute to Smith as a worker. "I tried to get him a job with a cartage contractor once," said one official, "and told him that Smith loaded as much earth into the carts as three of his own boys. But it was no good."

And a foreman on the job is equally emphatic. Once they were filling in a trench when Smith joined in the job. "He shifted as much dirt as six of the boys," said the foreman, "and all I had to do was to get it stamped down."

If someone would give him a job on a farm, he added, he would get through a tremendous amount of work. That seems to be the solution of the great Smith problem, which hitherto the Council, with a great deal of sympathy for the man, has not been able to solve. But Smith has refused a farm already, we understand. He "wants to work for the town." Picture on page 12



## NATIONS OF THE FLAG

THEIR RAPID RISE TO  
POWER AND FAMEA Great Englishman Older than  
Great Cities

## INDIAN PRINCE'S SURPRISE

We no longer speak of Australia, Canada, New Zealand, and India as colonies. They are commonwealths, dominions, nations. Yet one of our grand old men, Mr. Frederic Harrison, has been reminding the Dominion Premiers that he is older than their cities.

In his 90th year he remembers when there was no Melbourne or Sydney in Australia, no Auckland or Wellington in New Zealand.

"I was a schoolboy when they were being built. I recall their early struggles and their wars," he told his friends.

That is a remarkable reminder of the youth of these nations which have done such wonders in the 19th and 20th centuries.

How strange Mr. Harrison's words must have sounded in the ears of the Maharajah of Kutch, who was present, for the civilisation of his own India was already old when Britain, with men clothed in skins, became itself a colony of the Roman Empire. Civilisation in India was older when Julius Caesar came to Britain than ours is now.

Rome took her civilisation from Greece, Greece took hers from Crete, Crete from Egypt and Babylon, which had literature, schools, even women's colleges, 4000 years ago; and the cultures of India and Babylon were closely associated.

It must have occurred to this Maharajah that there stands a mystery city on the Irawaddy, the city of Pagan in Burmah, which had been dead for 500 years before Australia was born as the home of white men. There, lining eight miles of the river, stands that extraordinary deserted city, unpeopled today as it has been for the last 600 years. With all its wonders, and splendours it has been deserted, save by wild beasts, throughout the time that Canada, Australia, and New Zealand have come on to the map.

One man has lived to see the rise of these dominions, but history itself cannot interpret yet all the problems and mysteries of these ancient homes of men which have risen and fallen and lapsed into silence in another part of our far-flung Commonwealth.

## WHAT IS A DROUGHT?

A Popular Word with a  
Particular Meaning

The word drought, like many other words, has come to be used in a general sense. A drought means to most of us an extended period of dry weather.

There is, however, quite a strict meaning of the word in scientific language, and it cannot be correctly applied except in the case of a period of not less than 14 consecutive days in which there has been no rain whatever.

If more than 28 consecutive days pass during which the rainfall is not more than a hundredth of an inch a day, this is known as a partial drought. The longest absolute drought hitherto was in 1893, when there was no rain for 44 days.

## CANADA SAVES MILLIONS

## Science in the Fields

The botanical branch of the Canadian Department of Agriculture is proud of having saved the Dominion eight million pounds a year.

It has done so by checking smut, which attacks Canadian crops, and by preventing blight and rot among potatoes. The Department estimates that the damage done by insects to the world's field crops is not less than £25,000,000 a year, but we believe the amount to be actually much greater.

## CHEAPER FLYING?

SOMETHING NEW FROM  
THE CRADLE OF FLIGHTHas Mr. Orville Wright Solved  
a Great Problem of the Air?

## SPEED AND WEIGHT

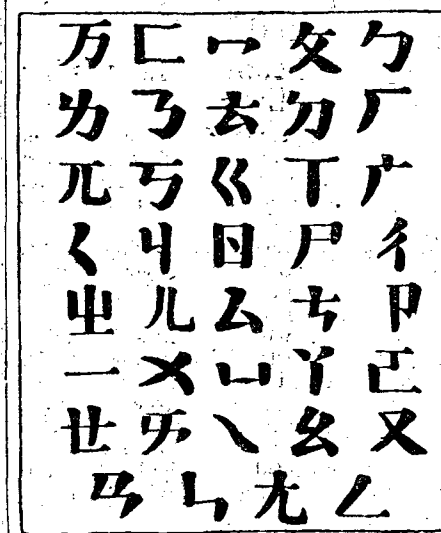
In studying flight men have closely watched the birds, and have succeeded in evolving an aeroplane that will fly. But the power plant of the aeroplane is out of all proportion to the work done.

High power means high cost, and it is this question of cost that is preventing aircraft from occupying its proper place in our lives. Many experiments have been made, notably by Mr. Handley Page, to give greater efficiency for less power, and so cheapen aviation; and it seems right that a great success in this direction should be achieved by Mr. Orville Wright, one of the famous brothers who made flight possible.

Great secrecy has been observed regarding the new Wright invention, which is now being tested at Dayton, Ohio, the scene of many of the earlier Wright triumphs; but it has been said that it consists of a new wing resembling that of a bird more closely than anything else yet. The whole of the leading edge of the wing is adjustable, as also is the trailing edge, and it is possible to alter the camber, or curve, of the wing while in flight.

With existing aeroplanes wings are designed either for speed or weight-carrying. The camber necessary on a weight-carrier will not allow great speeds without a big expenditure of power; and a machine designed for speed alone cannot lift heavy weights and must have a large space for alighting.

With the new Wright invention it will be possible to start the flight with such a camber on the wing as will lift a heavy weight, and to lessen the



The New Chinese Alphabet. See page 2

camber at a height so as to increase the speed without extra power. On alighting the camber may be altered again so as to make the machine a slow flyer, and enable it to come to a standstill after a short run.

The idea of a wing with a variable camber is not new, for an English aeroplane, the Fairey, has had such wings and has been flying with great success for years.

But there are many new points in the new Wright machine. It is said that loads may be increased five times without any increase of horse-power, and, if all that is claimed for it is true, the new device will do much towards making aircraft a serious rival to other modes of transport.

## Pronunciations in this Paper

Adonais	Ad-o-nay-is
Cherokees	Cher-o-keez
Guatemala	Gwah-tay-mah-lah
San Diego	Sahn De-ay-go
San Jose	Sohn Ho-say
Schwabe	Shvah-be
Sequoia	Se-kwoy-ah

## NEWS FROM EVERYWHERE



## Gathered by

£400,000 has been spent on a new picture palace at Brighton.

The Salvation Army reports that it now has 33,157 bandmen.

The U.S.A. War Department is publishing the names of 160,000 war "slackers."

Wasp's Nest in a Drawing-room  
An Eastbourne reader sends us news of a wasp's nest found in a chair in a drawing-room.

Cost of Bad Health  
Fourteen million working weeks are lost every year in the United Kingdom through sickness.

Killed by a Wasp  
A man who was stung by a wasp at Elmers End walked home and died soon afterwards.

Islands Follow the U.S.A.  
The entire prohibition of the drink traffic has been adopted in Hawaii and the Virgin Islands.

Soldier Poultry Keepers  
About three thousand men from the war have now been trained as poultry keepers in the United Kingdom.

A Golden Empire  
Last year the British Empire produced more than twice as much gold as all the rest of the world together.

Australia's Far-Off Neighbours  
An Australian writer points out that the middle of Siberia is nearer Australia than any part of British South Africa.

Preventing Mischiefs  
Motorists who exceed the speed limit in Winnipeg are not only fined but have their cars impounded for a time.

Horse Trough with a History  
An old stone coffin of a princess has been used for centuries as a water-trough for horses on a farm in Wales.

He Did Not Hear  
"Can you hear me?" the magistrate at Tottenham said to a man who declared he was deaf. "No," said the man.

Pompeii  
Some liquid has been found in a cauldron at Pompeii which was there at the time of the destruction of the city 18 centuries ago.

End of the Dreadnought  
The old battleship Dreadnought, which gave its name to a class of warships, has been broken up and sold for £44,000. It cost £1,500,000.

The Drought and the Thames  
The daily flow of the Thames at Teddington Lock has fallen from 1200 million gallons in July 1920 to 25 million gallons last month.

English Preferred to Esperanto  
At the Scandinavian Peace Congress in Copenhagen a resolution was passed in favour of English, rather than Esperanto, as the international language.

Grazing in a River Bed  
A curious effect of the drought in France was the sight of a flock of sheep grazing in the bed of the River Rhone, where grass had begun to grow.

Population of Scotland  
A rough estimate of the census returns of Scotland shows an increase in ten years of 121,253, the population being 4,882,157, of whom 2,533,861 are females.

Hot and Cold  
A London coroner has been reminding us all of the very wise rule that when mixing hot and cold water when children are about it is always wise to put in the cold water first.

Donkey Goes to the Workhouse  
The owners of three ponies and a donkey having gone into hospital at Rochdale, the animals are being taken care of by the workhouse bailiff, and will work for their living.

A Brave Boy's Success  
Stanley Widdows, the brave little fellow of Bradfield, Berkshire, who not long ago received the R.S.P.C.A. bronze medal and a watch for going down a well to rescue his dog, has won a scholarship at Newbury Grammar School.

## THE WEEK IN HISTORY

POET WHO PUT DANTE  
INTO ENGLISH

Wit with a Wonderful Memory

BAD MEN EXECUTED ON  
A FALSE CHARGE

Aug. 14. Cary, translator of Dante, died, London 1844  
15. Queen Philippa died at Westminster 1369  
16. Thomas Fuller died in London 1661  
17. Empson and Dudley executed on Tower Hill 1510  
18. Earl Russell, Prime Minister, born, London 1792  
19. Roman Emperor Augustus died at Nola 14  
20. The brothers De Witt killed at the Hague 1672

## Henry Francis Cary

THE Rev. Henry Francis Cary made the English translation of Dante's poems that is most widely read.

Dante and Milton were the poets who pictured most imaginatively life apart from this world. Dante portrayed the souls of the dead, and Milton pictured an angel-world before man.

Cary turned Dante's Italian rhyme into English blank verse, preserving the spirit of the work, and his translation is used because of its readableness.

But at first it seemed as if this work of twelve years had failed. People did not read it. And yet Cary lived to see four editions sold. He was on the beach at Littlehampton with his young son, and as they strolled he quoted aloud to the boy the Greek of Homer. A passing visitor heard the sonorous Greek and, introducing himself to Cary as Samuel Taylor Coleridge, went on with the Greek quotations.

Cary then told him about his unsold translation of Dante, and gave him a copy. The poet was delighted with it, and spoke so highly of it that it was soon accepted as a standard book, and Cary, who had been a country parson, became an assistant librarian at the British Museum.

## Thomas Fuller

THOMAS FULLER, a clergyman of the time of the great English Civil War, will never be forgotten because, more perhaps than any other preacher, he mingled good sense and out-of-the-way knowledge with humour.

He was a strong supporter of King Charles, yet people who detested that king kept a warm place in their hearts for Thomas Fuller, the Royalist preacher. He wrote a number of books, either religious or historical, but all packed with wisdom finely expressed and brightened by humour.

His best-known work was his "Worthies of England," telling of people who, in many instances, would not have been heard of but for him. He loved to record country ways and tales and superstitions.

Fuller had a remarkable memory. He could repeat 500 words that had been read to him twice; and in the days when all shops had signs he could walk up a long street and then repeat all the shops in the street in their order.

## Empson and Dudley

THE swiftness, sternness, and strangeness of punishments in the olden days were never seen more clearly than in the close of the careers of two lawyers, Richard Empson and Edmund Dudley, in the reign of Henry VIII.

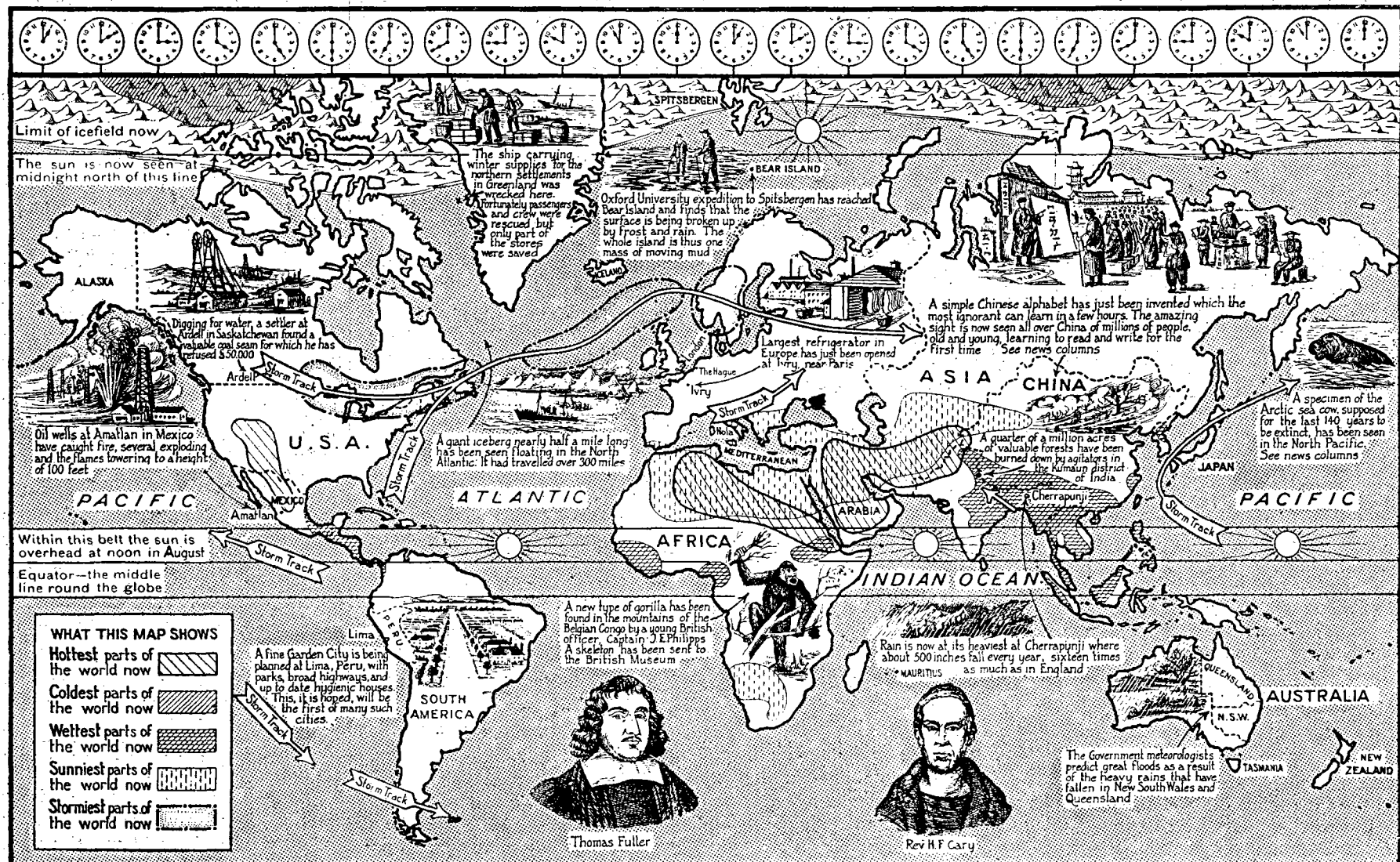
Henry VII, whose reign ended the Wars of the Roses, was a miser. When he died he had hoarded two million pounds, a vast sum in those days. He got it, to a large extent, by fines on people for faults they were said to have committed during the wars; and Empson and Dudley were the lawyers he employed to make the fines look lawful.

Of course, the two men were hated everywhere; and when Henry died, and his son succeeded him, there were hot demands for the punishment of the dead king's lawyers. So young Henry had them promptly beheaded on Tower Hill, London. But he kept the two millions they had gathered in for his father.

The charge made against them was not that they had been extortioners, which was true, but that they had planned the young king's death, which was untrue.



# PICTURE-NEWS AND TIME MAP SHOWING WEATHER ALL OVER THE WORLD



## GREAT MAN'S MEMORY Two-Million-Pound Monument MAKER OF THE PANAMA CANAL

The Government of Panama has given two million pounds to found an Institute of Tropical Diseases in memory of Colonel Gorgas.

It was Colonel Gorgas who conquered disease in Panama by applying the discoveries of science and destroying the breeding-grounds of the mosquitoes. He drained all swamps, sealed up all vessels of water, poured oil on to open waters everywhere so that the mosquitoes could not emerge, and in the end abolished malaria and transformed Panama from a place of death into the healthiest place in the world.

It is fitting that the memory of this great man, who made possible the Panama Canal after thousands had died in the vain attempt to dig it, should be kept alive by carrying on the sort of work he did.

## A SPECK IN THE SEA Taking Possession of Scroby Sand

Scroby Sand, off Yarmouth, has lately been seen lying high and dry in the sea, and members of the Yarmouth Port Commission visited the spot officially in their tug.

On landing they sank a flagstaff in the sand, and formally took possession. One member of the party took with him a golf club and ball, and enjoyed a stroke—certainly the first stroke of golf that had ever been played on this wreck-strewn point.

It is said to be 340 years since an official visit was paid to this drowned land; the bailiffs are reported to have visited it and taken possession in 1580.

## FIREPROOF AEROPLANES American Inventor's Discovery

As aeroplanes are built of highly inflammable material and carry many gallons of gasoline, fire has been the greatest enemy which airmen have had to contend with.

An American inventor has now perfected a process to make aeroplanes fireproof. It consists simply in treating the fabric and woodwork of aeroplanes with a fireproof composition.

This composition has recently undergone very severe tests with complete success. The wings of an aeroplane were sprayed with gasoline and set alight when the machine was in the air, and no damage was done either to the aeroplane or the pilot.

Mr. Bradley has also invented a fireproof suit for airmen, made of asbestos and aluminium.

## HELPING THE CORN TO GROW

### Electricity in the Fields

There have been many attempts to assist the growth of crops with electricity, and the results have been varied; but a new system has recently been tried at the Rothamstead Scientific Farm, near Harpenden, and has had considerable success.

A network of wires was erected over growing barley about ten feet from the ground, and currents of 15,000 volts were passed through the corn. Various kinds of discharges were tried, and, though no final decision has been arrived at, it appears that the average increase of growth caused by the electrical discharges is about 21 per cent.

That is not enough to make the electrical treatment of crops a commercial proposition, but a very little greater increase would pay, and it is hoped to achieve it.

## WORKMAN GIVES UP HIS SAVINGS A Fine Fellow and a Fine Example

Most workpeople like to enjoy their little savings up to the end of their lives; but Mr. John Santos, an Australian citizen of Portuguese birth, has shown a better way.

He is not very rich, having worked as a wharf labourer for 20 years, but he has saved about £2000, part of which is invested in his house.

Almost the whole of this sum, including the property, he has now handed over to the Children's Hospital at West Brunswick, near Melbourne, retaining only a small amount for his immediate needs and making the one stipulation that the hospital shall look after him and allow him to go on living in his old home.

Needless to say the condition was readily agreed to, and already the hospital is benefiting to the extent of nearly the whole of the £2000.

## TWENTY-FIVE MILES IN 24 HOURS

### Strange Experiences in the Atlantic

An extraordinary thing has happened to an American who, feeling tired of life, went on board a ferry-boat in New York Harbour and then threw himself overboard without anyone seeing him.

The touch of the cold water revived his interest in life, and he began to swim desperately. Then a floating board came near him, and, supporting himself on this, he drifted for 25 miles, till at last he was carried by the breakers among hundreds of bathers on Long Beach, a famous seaside resort.

The amazing experience of this man, who is a bricklayer 40 years old, lasted for 24 hours, so that in the water he travelled almost exactly a mile an hour. He was almost exhausted through thirst, hunger, and exertion.

## LIFE IN LOUISIANA Pity the Poor Farmer

Louisiana is getting jealous. It seems that she is far too dependent on her sister State; to please one of her papers. This is what we read about the lot of the farmers there.

The average Louisiana farmer gets up early (says a journalist there), at the alarm of a Connecticut clock, buttons his Chicago suspenders to Detroit overalls, puts on a pair of cowhide shoes made in Ohio, washes in a Pittsburg tin basin, using Cincinnati soap, and dries on a cotton towel made in New Hampshire; sits down to a Grand Rapids table, eats hot biscuits made with Minneapolis flour, Kansas City bacon, and Indiana grit-fried in Omaha lard, cooked in a St. Louis stove; buys Irish potatoes grown in Michigan, and canned fruit put up in California, seasoned with Rhode Island spices, claps on his old wool hat made in Philadelphia, puts New York harness on a Missouri mule fed on Iowa corn, and ploughs his farm, covered by a Massachusetts mortgage, with an Indiana plough.

At night he crawls under a New Jersey blanket, and is kept awake by a Louisiana dog, the only home product on the place.

## NEW INDUSTRY FOR FRANCE

### Paper from the Vineyards

By Our Paris Correspondent

France is just discovering that its vine branches can be made to yield every year 720,000 tons of pulp for making paper.

Until now, especially in poor countries, vine branches have been used for fuel, but this will not continue as it is now known that vine branches are good materials for paper-making.

The vineyards in France extend over four million acres. It has been calculated that two acres can give 3000 pounds of vine branches, which, turned into paste, will make 900 pounds of it, so that 720,000 tons of paper could be obtained from French vineyards alone.



## CHILDREN'S NEWSPAPER

AUGUST 13 1921

## Which Way Shall We Go?

Two great signposts stand out in the news of the world. One points the way of sanity that leads to the Millennium; one points the way of madness that leads to the ruin of mankind.

Which way are we going? Which way are the Governments leading the plain people of the world?

One of the signposts is the Russian Famine. This ghastly deed is the work of war and political folly. Such things have always followed war, and always will. The men who cry for war, because war pays them, spread famine and plague and pestilence about the earth.

The other signpost is the Chinese Alphabet. Four hundred million people who never read a book are suddenly learning to read. They are equipping themselves with a weapon which will one day put war and those who make it on a rubbish heap.

This mighty Chinese race has taken a turn in its history that will astonish mankind. As Europe rushed into War, China is rushing into Knowledge. Its people are leaping with excitement at the thought of the new power that is rising within them. Thirty-nine little letters that they can learn in a day, and what a world is theirs!

For them the gates are opening, and through the gates are all the pages of history, with its wonder and its warning; all the pages of Shakespeare, with his music and majesty; all the pages of the Bible, with their everlasting glory; all the pages of travel, with country after country passing by. Let the world look out when these four hundred million people have read these things.

As for the great nations of Europe, which signpost do they follow? The excitements of war do not die down. We steal millions of money from education and squander them in Mesopotamia, and we are to have more big battleships, it seems. Are we going the way of the Russian Famine or the way of Knowledge and Peace?

America is calling us to discuss disarmament at Washington, and five little nations of America have shown us the way. They have swept away their presidents and parliaments and all their differences, and made themselves one State, reaching from the Atlantic to the Pacific.

The little American republics and the great Chinese race pursue the path of sanity and peace, and Europe loiters on the road that leads to plague and famine. Is it not time that some great voice was heard around the world, demanding and insisting that those who call themselves our Governments shall end their tricks and politics and give us Peace? A.M.



## THE EDITOR'S TABLE

Fleetway House, Farringdon Street, London  
above the hidden waters of the ancient River  
Fleet, the cradle of the Journalism of the world



## In Jerusalem

A SOCIETY for the Prevention of Cruelty to Animals has been formed in Jerusalem. We are sorry. There should be no cruelty in Jerusalem.

## The Coal of Many Colours

It is a dull day that has nothing beautiful to see. Is there not a good idea in this note that comes in our post-bag?

COAL being expensive and man being clever, man seeks to find a way of dispensing with coal.

He burns in his engines Black Coal. He can already use waterfalls, which he calls White Coal; he has harnessed the sun's rays and calls them Golden Coal; soon he will use the energy of the tides and call it Green Coal; and now he is talking of copying his ancestors and using again the speed of the wind, which he may call Blue Coal.

A few more discoveries, and we shall have coal all colours of the rainbow.

## Building on the Ruins

WHATEVER we might think of Prussianism, it appears to be true, according to all the news reaching this country, that Germany is setting a remarkable example to the world.

Her people are not only putting their backs into their work in order to get over the ruin of the war, but they are giving a number of working hours to the nation. They call them the Fatherland Hours.

It is the penalty of war, no doubt, but is there not a lesson in it for us all? Should we not be proud of ourselves if we felt that, in order to make houses cheaper and clothes cheaper and food cheaper, we were all working extra hard and extra long, even at extra wages?

Some people say, gloomily or angrily: "Germany will soon be on her feet again." They would be wiser to ask themselves how a nation stricken to the earth manages to get upon her feet again.

## A Word to the Bus Companies

THE very displeasing spectacle was seen in Regent Street the other day of a roadman sweeping up hundreds of bus tickets from the pavement.

It seems a pity that for most people there seems no other way of getting rid of these tickets than by throwing them down, but could not this quite easily be avoided? Somebody in the bus companies is doing splendid work by making us all help to keep the streets safe; will he not use his ingenious brain by making us all help to keep the streets tidy?

All he has to do is to get his companies to put ticket-boxes on the buses, and in a month or two we shall be dropping in these boxes millions of tickets every week—so many of them that they would surely pay the cost of the boxes many times over.

## Can We Make Rain?

MOST people will have been wondering during this time of drought if science knows no way of making rain. The story we publish in another column is certainly remarkable. We offer no opinion about it beyond that.

It is interesting to remember, however, that a scientific man has calculated the energy required for bringing down an inch of rain over a square mile to be equal to fifty million horsepower working for an hour. That is a stupendous proposition, entirely beyond our human powers.

But the day will surely come when man will be less hopeless in a drought than he is now. There are more things in heaven and earth than even science dreams of yet.

## Tip-Cat

"A MAN cannot change yesterday," somebody writes, "but he can change tomorrow." What we want is change today.

THE need of the drought: a reigning monarch.

THE Prime Minister of Canada, who has just gone home, thinks London is "the centre of gravity of the world." Even Peter Puck feels serious at times.

WE have heard of a tired bricklayer. Why not give him charge of the rain-gauge?

THE L.C.C. is employing organ-grinders to play in the parks for children.

One way of giving them a change of air.

THE baker's kindness others heed not: He has to knead that we may need not.

PITTSBURG has been asking for 25,000 workmen. It is said there is quite enough work to keep 10,000 busy.

SIR FREDERICK BANBURY declares that M.P.s "do not sit as single persons." Is he going to propose that they should have double salaries?

JAZZ is dying, they say. It always did sound like that to us.

## The Railways Looking Up

CHEAP fares are going to make the railways pay again. Perhaps the Postmaster-General will watch the process and learn the lesson. We ought to be ashamed of the fact that it is cheaper for a firm in London to send things to Belgium to post to Manchester than to post direct; and with cheap railway tickets we hope to wake up some morning to find that the Post Office has realised what everybody outside it knows—that as a money-making business cheap postage beats dear postage all the time.

## Little John

By Our Country Girl at the Seaside

AT eleven o'clock our hard-working, early-rising family assembles in the verandah for tea and cake. There are other bipeds who attend this little repast as punctually as we do—a mob of sparrows, two quarrelsome robins, and a shy, gawky thrush.

Our favourite guest is a young sparrow whose leg is deformed, so that his right claw is bent backwards. He cannot stand, and has to lie on one side as he eats. He comes very close to us—much closer than any of the other birds.

Perhaps it is because he is hungrier, and perhaps because we are not more dangerous to him than his fellows are. We marvel that he has been allowed to live, for birds and beasts mob and kill any of their kind who are sick or maimed; that is Nature's way of stamping out disease. By some accident this youngster has escaped the executioners, and he picks up a living as best he may.

After the birds are fed we walk to the end of the garden and look down on the sands at the foot of the cliff. It is bathing hour; the foam is specked with children. Here comes another, the little crippled John, always the last.

Slowly and painfully he drags himself down the beach, smiling gallantly while his will wrestles with his poor mutinous limbs. He is like the deformed sparrow who hobbles so awkwardly apart from the swift and delicate flights of the others.

Suddenly the children playing ring-o'-roses in the sea catch sight of him. They rush out, surround him, pet him, and tug him along. He lies in the shallow foam, and they buzz about him as about a chief, splashing and playing in a rapture of fun.

"I think I could live with the animals!" cried Walt Whitman, indignant at man's greed for money and at the hypocrisies of society. But, after all, the human heart is the one thing in Nature which has the quality of mercy.

The quality of mercy is not strained; It droppeth as the gentle rain from heaven Upon the place beneath; it is twice blessed—It blesseth him that gives and him that takes; 'Tis mightiest in the mightiest; it becomes The throned monarch better than his crown. His sceptre shows the force of temporal power,

The attribute to awe and majesty, Wherein doth sit the dread and fear of kings; But mercy is above this sceptred sway, It is enthroned in the heart of kings, It is an attribute to God himself, And earthly power doth then show likest God's

When mercy seasons justice.

And mercy is not found very much in the animal kingdom, though some of the stories our readers tell us show that it does exist. But the truth is that if you are sad and suffering it is better not to live with the animals.

## Little Things

The child, the seed, the grain of corn,  
The acorn on the hill,  
Each for some separate end is born  
In season fit, and still  
Each must in strength arise to work  
The Almighty will. R. L. S.



PETER PUCK WOULD LIKE TO KNOW

If Parliament could not suspend the old rhyme: "Rain, Rain, go away; Come again another day."



## THE RAIN MAN SURPRISING NEWS FROM CANADA

### Hatfield Fulfils His Contract with the Farmers

#### RAIN AT £500 AN INCH

The surprising news comes from Toronto that Hatfield, the rain-maker who contracted to induce rain to fall at Medicine Hat, has fulfilled his contract and earned £2000.

No rain fell in Medicine Hat in May or early June, but four inches have fallen since Hatfield set up his towers, and everybody is satisfied. Hatfield is to contract again for next year.

We have been sceptical of this queer experiment, and we therefore gladly print the following account of Hatfield and his work from facts given in Everybody's Magazine, and we are persuaded to wish somebody would invite Hatfield to bring his towers to England.

The Pacific Coast insists on calling Hatfield a rain-maker, and Mr. Hatfield says they may call him that if they like, but he will not answer.

#### First Successful Experiment

Mr. Hatfield, who lives in Los Angeles, California, has been steadily persuading obstinate raindrops to drop for more than fifteen years. His first experiment was conducted on his father's ranch in San Diego County, California, in April 1902, and was followed immediately by a light fall of rain when there had been none for weeks. Other tests gave him fifteen successes and one failure.

Mr. Hatfield has now made over 500 demonstrations, and his disappointments have been few. His contracts are always "No rain, no pay," and they have been for amounts ranging from 50 to 10,000 dollars. The territory he has covered extends from Central Texas to Dawson City, in the Klondike. The ranches of the San Joaquin Valley, California, negotiated contract renewals for his services for eight consecutive years.

#### Rain for the Gold Diggers

In the summer of 1906 Hatfield was called to the Klondike. The miners around Dawson City, lacking water for washing their gold-bearing gravel, offered him a bonus of 10,000 dollars if he could bring the district a good drought-breaking rain. The test began on June 11, and continued to July 20, during which time over four inches of rain were recorded, the greatest the vicinity had ever experienced during this season.

In March 1912, for 4000 dollars offered by ranchers and business men, the Rain Man engaged to fill the huge reservoir owned by a cooperative irrigation company at Hemet, Riverside County, California. Less than two inches had fallen in this valley in 11 months, and the reservoir was nearly dry.

#### Filling the Reservoir

Day after day clouds had formed overhead, only to drift away without releasing their moisture. Two days after Mr. Hatfield began operations, however, there was a rain that yielded nearly two inches. He continued his demonstrations for several days more, and when he removed his towers the rainfall had totalled 11.79 inches. The water in the reservoir rose 22 feet.

His greatest success, measured by inches of rainfall, was at San Diego in January 1916. The city and much of the surrounding farmland depend on the great Morena reservoir for water, and the reservoir was nearly empty. It had never contained more than a third of its capacity since it was built many years before. A contract was made with Mr. Hatfield to fill it to overflowing within a year. The amount offered for accomplishing the feat was 10,000 dollars, to be paid by the city. Mr. Hatfield got busy, and within a few days it began to rain. The start was somewhat mild, but soon there came a real downpour; in a day and a night the fall reached the terrible total of over 16 inches, and in less than 27 days the reservoir was filled to a point where the water rushed over the top of the high

Continued in the next column

## COMFORT FOR PARENTS—BY PETER PUCK

HOLIDAYS should not be regarded as a horrible epidemic, but as a goodly discipline necessary for our improvement.

One excellent way of keeping the children employed is to send them to the labour exchange every morning for the unemployment dole.

A strike of mothers does not worry boys; what they dread is fathers striking.

Boys will be boys, and so will girls. Prevention is better than cure.

Nothing provides more screaming distraction at a Pierrot entertainment on the sands than a teething baby.

It is a pleasant way of passing the holidays to go round the seaside resorts of England looking for a landlady who takes children.

A good tonic for holidaying mothers is the constant thought that schools have not been abolished altogether. It only seems like it.

Some parents manage to get a little peace during the holidays by encouraging their children to eat lodging-house pastry; but this drastic remedy should only be tried by those who can afford to hire a trained nurse.

## KEEPING COOL AT THE ZOO



The hippo was not too tired to open his mouth for a sweet



The elephant enjoys the kindly attention of his keeper

Even the thick-skinned animals that come from hot countries, like the hippopotamus and the elephant, have been feeling the heat in London. The elephant seemed quite overcome and could only lie down while his keeper threw water over him; but the hippo, though lazy and tired, was ready for a tit-bit when a lady friend visited him

Continued from the previous column

dam and formed a raging river. In some parts of the district the fall in these 27 days was over 40 inches. It was not a case of the country going wet where it had been dry for months, but a genuine flood.

What is Mr. Hatfield's method, then? It is really very simple.

"There is no magic in it," he says; "it is only scientific. The problem involved in the production of rain by artificial means resolves itself into localising the ever-present air-borne moisture and condensing it to the point of precipitation. To accomplish this I use certain chemicals, the character of which must naturally remain my secret. I work from towers about 35 feet high, on which I have great evaporating tanks.

The fumes of the chemicals, by means of the heat I use, are mixed with the air, which results in what you may term an overturning of the atmosphere.

This first produces cirrus clouds, the forerunner of rain clouds, and in a short time these cirrus clouds develop into the nimbus, or rain, clouds. Yes, it is all very simple. I do not bombard the heavens, nor do I trust to luck. You can understand that luck is not going to favour a man 500 times running."

In the old days Hatfield was an agent for sewing-machines, but nearly every night he spent delving into the mysteries of the clouds, the air strata, and all the queer habits of the realm above. The problem of inducing rain first troubled his mind during California's drought years of 1897 to 1900. During these years there was hardly any rain in Southern California, and great suffering resulted. Yet clouds and fogs were common, though for some reason the ever-hoped-for rains were withheld. All this set Hatfield wondering whether it would not be possible to lend Nature a hand, and the answer, he says, is Yes.

## MILLIONS DOOMED TO DIE

### TRAGEDY OF FOLLY AND WAR IN RUSSIA

#### Granary of Half Europe in the Grip of Famine

#### GREAT CALL TO CIVILISATION

All through history War is foul; all through history it has been followed by its daughters, Plague, Pestilence, and Famine.

The ancient order of deadly progress has been followed in Russia, where the Daughters of War are proving even more destructive than their grim and frightful parent. It is reported that 20 million people in Russia are on the brink of starvation, and investigators send out the appalling news that five million peasants, with their wives and children, in the district of the Volga and the Don are doomed to agonising death.

Their condition is so hopeless that if every country in the world set to work immediately to pour in relief the relief could not out-race the death which is fast descending upon the people of this stricken land.

#### Eating the Seed-Corn

Russia was ill-organised for war; she was not organised at all for peace. The rise of the Bolsheviks was accompanied by a wholesale seizure of land from its former owners, and there was no one to compel cultivation, no one to guarantee money for crops if they were grown. From year to year matters have gone from bad to worse. Everything in the country has been sacrificed to the feeding and support of the Red Army, which has maintained an almost constant civil war, rolling like a tide of fire.

For those who were willing to cultivate there were no implements. There were no fertilisers. The harvests grew so scanty that there was not enough seed-corn to sow the fields, for people ate what should have been put into the ground to grow.

Then, to crown the whole story of misery, this year has been a year of heat and drought, so that even the scarce crops sown failed to yield a tithe of what had been expected.

There is no food for human beings, no food for cattle, and, as always happens, typhoid, plague, and kindred diseases are rampant in the ranks of the famishing people.

#### Famine in the Granary of Europe

The pitiful irony of the situation is that South-East Russia, which ordinarily feeds half the country, which supplied all the food that was eaten in Russia during the revolution, is itself one of the chief sufferers; this old granary of half Europe is now a famine land. The fields are like deserts, and people are dying in them as they died in our fields when the Black Death smote England.

Of the twenty millions most seriously affected one quarter are reported to be under almost certain sentence of death. If the rest of the world can feed the remainder two million tons of food must be sent at once; and yet, if it is sent, so utterly have the Russian railways been ruined by the Bolsheviks that there is no certainty that it can be distributed in time, even supposing the Bolsheviks do not hold back the food from the peasants to feed their army.

The position is at once the strangest, the most tragic, and the most hopeless with which our modern civilisation has ever been faced; and the highest genius of statesmanship, as well as abundant goodwill, is necessary to save this perishing people from the awful doom that overshadows them.

#### THE INVASION OF WOLVES

Wolves are still increasing in numbers in France as they are in other parts of Europe, and have just appeared in the Department of Var for the first time for forty years. The people are taking steps to meet the menace.



## EDISON OF CENTURIES AGO WONDER MAN OF THE MIDDLE AGES

**Mysterious Manuscript  
Supposed to be by Roger Bacon  
KNOWLEDGE OF THE  
13TH CENTURY**

By the C.N. Boy Astronomer

Nine years ago a mysterious old manuscript was brought to light by a London antiquarian. It had been discovered among a collection of books from Parma.

A first glance showed that the manuscript was written in cypher, but the appearance of the cypher suggested that its solution would not be difficult. So the experts tried. Their efforts were in vain, however, until the document passed into the hands of Professor Newbold, of Pennsylvania University, one of the greatest living experts in medieval philosophy and science.

For six or seven years the meaning of the document had remained unknown when the professor read it, but a few months ago it became known that Professor Newbold, after working hard for two years, had succeeded in reading portions of the manuscript, which he found to be of the very greatest interest.

### A Strange Document

It consists of about 250 pages of vellum, written over with a strange writing and interspersed with numerous drawings of plants and astrological signs. There seems to be considerable evidence that it was written by Roger Bacon, who lived from 1214 to 1294. Bacon was the Wonder Man of the Middle Ages, a sort of Edison of his day.

He travelled on the Continent, and historical evidence seems to show that this document was presented to the Emperor Rudolf of Germany, who was himself a scientist. Moreover, the style of the paper and ink used suggest that it was written in the 13th century.

### Lenses Before the Microscope

The method of deciphering the manuscript does not seem to be entirely satisfactory, however. Professor Newbold has found that each letter really consists of ten or twelve signs of a kind of Greek shorthand, and if consecutive letters of the manuscript do not make a word the professor seeks the required letter some distance from the others.

But if we can believe what has been made out of this manuscript, as seems only reasonable, we are led to the conclusion that Roger Bacon must have been quite the greatest man of his time. It appears that he had a knowledge of the application of magnifying lenses, though centuries were to pass before the first microscope was made.

### Did Bacon Have a Telescope?

Bacon appears to have seen and written about various kinds of microscopic cells and other objects of natural history, such as could not possibly have been seen without magnifying lenses. Also, he gives a drawing of a comet which appeared in 1273, and another of the great nebula in Andromeda. The manuscript states that the nebula drawing was made with the aid of a concave mirror, and an eminent astronomer has stated that the artist must have had a telescope, because he shows features of the nebula which are invisible to the naked eye.

The use of a concave mirror suggests that Roger Bacon used what is now known as a reflecting telescope, supposed to have been invented by Newton long after.

There is an obvious reason why Roger Bacon should have adopted an intricate cypher for his writing. He was always more or less under persecution for his opinions, and probably, if the statements made in the manuscript had been publicly known, he would have been imprisoned for life, or perhaps even executed.

J. W.

## WHO HAS SEEN A SEA-COW? CURIOUS REPORT FROM FAR AWAY

**Queer Creature That Was  
Blotted Out in Multitudes  
IS THERE ONE LEFT?**

By Our Natural Historian

A message comes over the cables saying that the northern sea-cow is not extinct, that it has been discovered alive, swimming and feeding off the Aleutian Islands, which lie between Alaska and Kamchatka.

It seems too much to hope that the story is true, but the sea-cow is so different from other sea animals that native hunters should not be deceived.

The discovery of the sea-cow came about in a memorable and tragic hour. Vitus Behring, a great Dane in the service of Peter the Great, after an adventure of 16 years proved that the expedition of 1648 of Simon Deshnef did actually round Siberia; he proved that America and Siberia are not one continent.

He sailed through the strait that bears his name; he sailed from the coast of Siberia and reached America. Then, after horrible sufferings from storm, frost, thirst, and scurvy, in which his men died like flies and his ship was wrecked, he himself died on Behring Island, a hundred miles from Kamchatka, which he was trying to reach.

### Sea Monster Weighing Several Tons

On that island, at once his tomb and his triumph, the sea-cow was first seen by civilised man. It was a huge beast, allied to the manati and the dugong, the curious animals whose appearance and manners in the water gave rise to the legend of the mermaid. But the sea-cow was the largest of the tribe, and the most specialised. It reached a length of from 20 to 30 feet, with a girth of 20 feet, and it weighed four tons and more.

It had no hind legs, but a tail like that of a seal; its forelegs had become mere flippers, from which even the bones had vanished, and it had no teeth, but horny plates like a reptile's. Its food consisted of seaweed and other vegetable growths; and the beast, safe until man arrived, had forgotten the art of diving, so that it had to keep in shallow water, where it could easily be approached and killed.

And killed it was, in multitudes, for the survivors of Behring's force, making a boat out of their wrecked ship, reached home and told of sea-otters, Arctic foxes, reindeer, and the sea-cow. Men went forth in hosts to hunt them all, and it has always been believed that within 30 years of Behring's discovery the sea-cow, as a species, followed him to death, and that not one specimen remained alive.

But now, after a century and a half, comes this new story. We hope the sea-cow does survive.

## MYRIADS OF SWALLOWS Migration Over the Atlantic

The migration of swallows is not often actually observed, but a lady who has lived in Morocco has witnessed it and sends us this description.

One bright spring morning in Morocco, in 1914, on the coast of Casablanca, I think it was toward the end of March, I saw from my garden a broad, black, moving line in the sky. It came nearer and nearer, and then I saw it was the birds in migration.

They passed right overhead, flying at a height of from 200 to 300 feet. There were myriads of them—a broad line that reached as far as the eye could see. It took about 20 minutes to pass.

They came from the direction of the Atlas Mountains and flew out over the Atlantic. They seemed to be taking a direct line for America, but this could not be, and they must have changed their course for Northern Europe.

## AFTER YOU! A Tale of Two Chauffeurs in Paris AND ANOTHER OF TWO CARRIAGES IN ENGLAND

By Our Paris Correspondent

Politeness is not yet dead. Two chauffeurs have proved it in Paris.

Crossing a street two cars met. There was no collision, but very nearly so, and the tyres of both cars were rather rubbed by the brakes. But instead of railing, as generally happens, the two chauffeurs smiled and gently spoke to one another. "Go on first," said one of them.

"After you," said the other. And as one started off he politely bowed to his fellow driver.

The policeman, putting his book back in his pocket, could not believe his eyes. Should it not always be so? Does it not remind us of a story told in England some time ago?

Two gentlemen arrived with their carriages at the opposite ends of a very



New Republic of Central America. See page 1

narrow bridge. As the two were from rival villages, neither wanted to make room. Both drove on till the moment when the horses, touching each other, stopped.

Very politely the two travellers exchanged bows, and then, while one took out the Times, the other took out the Daily Telegraph, and both began to read. When each had read his paper, one said to the other, "Would you like to have the Times?" "Yes, thank you; allow me to lend you the Daily Telegraph," said the other. And they read on.

The story does not relate who gave up first. All we can say is that had they been readers of the C.N. they would have been much wiser men. Let us hope that they did not end like the goats in the fable, which fought for their place on the bridge till both fell.

## SHACKLETON'S SCOUT What He Must Be

Thousands of Scouts are wanting to go out with the Shackleton Expedition, and the Scout on whom the honour falls will be chosen by Sir Robert Baden-Powell, who will have special regard to their Scout services.

The selection will probably be made from Scouts who hold the Jack Cornwell Badge, the qualifications for which are:

1. Must be specially recommended by a recognised body of Scouts for pre-eminently high character, devotion to duty, and specific acts of physical courage; or hold an award for bravery for having saved life under exceptional circumstances; or have undergone great suffering in a heroic manner.
2. Must be a First Class Scout.
3. Must obtain a really good report from his Scoutmaster and some independent responsible person for industry and effort, obedience and discipline, trustworthiness, punctuality, smartness of bearing, kit, and appearance.
4. Must have a Missioner's Badge.
5. Must have passed for two of the following badges: Boatman, pilot, sea fisherman, signaller, star-man, swimmer or rescuer, watchman; or must have the Public Service Coast-watching Badge.

## SHOULD A DOG HAVE A TAIL? Yes, Says Nature No, Says Fashion

**AND THE LAW TRIES TO  
PLEASE BOTH**

By Our Natural Historian

A statement in our Question Box that it is illegal cruelty to dock a dog's tail brings a note from a lover of dogs pointing out that it is impossible to get a well-bred terrier pup which has not been docked unless it is ordered from the dealer before it is born. How is it, she asks, if it is illegal to dock dogs' tails, that no terrier is accepted for exhibition which has not been docked?

Perhaps we had better state the exact law upon the subject. If one can prove to a bench of magistrates that cruelty has accompanied the docking of a puppy under six months old a conviction must follow; and the Royal Society for the Prevention of Cruelty to Animals has succeeded several times in enforcing the law in cases of this sort. After the animal is six months old its tail may not be docked at all unless the dog has been placed under an anaesthetic.

So that it is illegal to dock a puppy's tail if the work is cruelly or unskilfully done, and it is unlawful, under any circumstances, after six months unless an anaesthetic is used.

That is better than it used to be, but the law is a piece of hypocrisy and very unsatisfactory. The act of cutting or biting off a puppy's tail is an atrocity, but legal cruelty must be proved to convict whoever performs the operation.

Nature decreed that a dog should have a tail, fashion decrees that it shall not; and the law says that the cruelty of fashion shall be punished if it is "legal" cruelty. As if a dog suffered any the less from mere cruelty than from "legal" cruelty!

## AN ARTIST DOWN SOUTH Conrad Martens & His Pictures PAINTING AUSTRALIA

Conrad Martens: The Man and His Art. By Lionel Lindsay. Angus and Robertson, Sydney.

Conrad Martens was London born, in 1801, of a German father, and he studied art under Copley Fielding. Then, drifting out to South America, he became topographer to the Beagle on the famous voyage with Darwin.

Martens left the ship at Valparaiso, and in 1835 arrived at Sydney by way of the South Sea Islands and New Zealand. Sydney then was a town with from 15,000 to 20,000 inhabitants, and Martens settled down as a landscape painter and teacher of art. He was the first Australian painter.

At that time there were wealthy squatters living in houses built on the English country house model, and many of his paintings were representations of these houses and their surroundings; but to satisfy his artistic taste he also painted some of the finest stretches of Australian scenery.

Now his works are invaluable as a record of the country as it then was. They are historical transcripts, and the Australian authorities have realised their value and placed many of them in their public buildings.

This handsome book contains sixty reproductions of paintings, sepia drawings, and pencil drawings, prefaced by an admirably-written life and criticism by Lionel Lindsay. The estimates of the pictures by Mr. Lindsay are in a high degree judicious.

The book, beautiful in itself, is absorbingly interesting for the light it throws on the development of Australian taste. Living remote from the European changes in art, and often working primarily for a living, Martens yet had true artistic perception, and his best studies have a permanent value.



## A CRAB'S NEW COAT

### Strange Habit of a Seaside Friend

#### GROWING NEW LIMBS TO REPLACE OLD ONES

By Our Country Correspondent

Many crabs round our coasts are throwing off their old suits and growing new ones.

Just now, when so many boys and girls are away at the seaside, is a good time to study the crab, one of the most familiar objects on our coasts.

Armed with weapons of both offence and defence and with powers that are extremely useful to it, the crab is a striking example of the way in which Nature provides for her children.

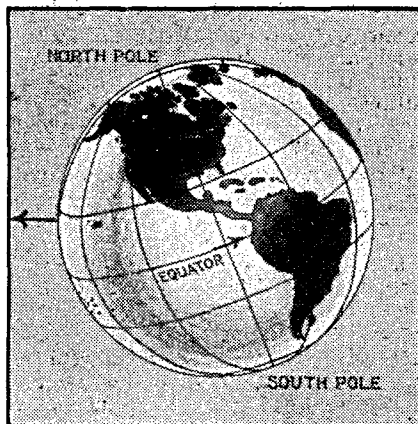
Like its cousins of the same crustacean family, the lobsters, it has a hard outside skeleton, or shell, which protects it from many enemies that would otherwise destroy it. This shell, however, is different from the shell of the whelk or oyster, for it is really the outer skin of the crab that has been rendered hard by the deposition on it of limy matter. The skin thus becomes a complete suit of armour.

Very often we find on the beach what appears to be a dead crab, and when we pick this up we find that it is strangely light and empty. As a matter of fact, this is not a dead crab at all, but the shell, or skin, of a crab that has been cast off to enable the crab to grow, for when the shell is hard and firm the crab cannot increase in size, and it has to throw off the suit, grow rapidly while it is soft, and, at the same time, produce a new suit to fit the new size.

Another interesting thing about the crab is that it can cast off its limbs if these become injured through accident or in a fight. Then the crab at once proceeds to grow a new limb, and that is why we sometimes find crabs with one claw much larger than the other. The small claw is a new one that is growing to replace one thrown away.

The crabs we see as such familiar sights on the beach and among the rock pools are therefore exceedingly interesting creatures, and their structure and habits are well worth careful study.

## THE EARTH SEEN FROM THE SUN



The earth at 6 p.m. on any day in August as it would be seen through a telescope from the sun. The lines of latitude and longitude are put in to show the tilt. The arrows show the way the earth is travelling and rotating.

## NEXT WEEK IN THE GARDEN

Plant out broccoli for the late crop and water frequently. Sow lettuce seed of the hardy sort in a sheltered situation, and tie up advancing crops.

Celeriac suckers should be closely removed from the top of the root. Sow seeds of endive, and for a late crop plant out from previous sowings; plants sufficiently advanced should be tied up to blanch.

Cuttings of pentstemons, antirrhinums, and some of the phloxes may now be taken. Sow annuals for spring bedding, such as Virginia stock, Alyssum saxatile, and silene.

Cuttings of choice Alpines should now be inserted, as they will then make strong plants by next spring.

## AFTER 100 YEARS

### GREAT LAWSUIT ENDS

#### Spain Takes Over the Whole Alhambra

#### WONDERFUL PALACE OF THE MOORS

At last the Spanish nation is coming into complete possession of the Alhambra, the wonderful fairy palace of the Moors on the hill at Granada.

For nearly a century a lawsuit has been going on as to who should own the Generalife Palace, an outlying building of the Alhambra, whose name is derived from an Arabic phrase meaning the garden of the architect.

The State has long been at law with the Marquis of Campotejaer and his ancestors domiciled in Italy, but an agreement has now been reached by which the Spanish nation takes full possession.

The palace itself is not very important, but the gardens surrounding it are a veritable bower of beauty, and contain some of the finest myrtles and cedars and cypresses in Spain.

The main Alhambra Palace is, of course, the greatest glory of Spain, but its history has been one long tragedy from the time it was completed in the 13th century right down to the end of last century, when it was damaged by fire.

#### A Dream Come True

It is the crowning triumph of Saracen architecture, and has been aptly described as a pearl set in emeralds. It consists of a number of small halls and courts and rooms grouped round two large courts, one of them, called the Court of Lions from a fountain with sculptured lions in its centre, being exquisitely beautiful. But, though small, what magnificent rooms and courts they are!

Perched on a hill amid delightful natural surroundings, the Alhambra looks unattractive at a distance. Outside it has a severe and fortress-like aspect, with massive walls and towers. But go inside and you are in fairyland at once. It is like a beautiful dream come true. Never was there such a variety of form and detail as in these filigree, or lacework, walls and ceilings, and yet nowhere does the spirit of harmony reign so supreme.

#### The King Who Wept

No wonder the unfortunate Boabdil, the last Moorish king of Granada, wept when he had to leave it and hand over the keys to the Christian sovereigns Ferdinand and Isabella. When this became inevitable there was a night of doleful lamentings within the walls of the Alhambra, the historian tells us; for the household of Boabdil were preparing to take a last farewell of that abode.

Before dawn a mournful cavalcade of weeping women moved out of a postern gate, and, after taking a last look at their favourite home, went sadly away. They were the wives and family of the last Moorish king in Spain, departing thus early to avoid the triumphant gaze of victorious enemies.

#### The Last Sigh of the Moor

"They are thine, O king," said Boabdil, as he handed the keys of the Alhambra to Ferdinand on that sad January morning in 1492, "since Allah so decrees it."

Then, when he rode away from his capital for ever, he could not help turning to take a last look at the fairy palace no longer his, and ever since the place where Boabdil halted has been known as The Last Sigh of the Moor.

The Alhambra in the days of its glory could house 40,000 men. Part of it was pulled down by Charles V to build a new palace that was never finished. Then for ages it was neglected, and in 1812 the French blew up eight of its towers and tried to destroy the whole. In 1821 it suffered from an earthquake, and, as already mentioned, a fire nearly destroyed it in 1890.

## C.N. QUESTION BOX

### Little Puzzles in Natural History

Answered by Our Natural Historian

All questions must be asked on postcards, and not more than one question on each card.

Can We Tell the Age of a Ladybird from the Number of Its Spots?

No; the spots indicate the species to which the ladybird belongs.

To What Family Does the Seal Belong?

The seals are placed in the fourth order of the animal kingdom. They are carnivora, or flesh-eating mammals.

Do Eels Feel?

Eels, like fishes, are plentifully furnished with nerves, therefore they feel. All living creatures feel; violence and cruelty cause them to suffer.

When is a Horse too Old for Work?

That depends on the work and the condition of the animal. Many horses are at work in towns up to 20 years of age; some work at light tasks up to 25 and 30.

Why is not a Bird Killed by Sitting on a Telegraph Wire?

No matter how high the current passing through the wire there is no danger to the bird unless it be in electrical contact with wire and ground simultaneously.

What Should a Dove be Fed On?

The ordinary corn mixture sold for pigeons (excluding maize) should serve, but the writer always found his doves thrive best on good millet, with perhaps a little Spanish canary seed added.

Why are Empty Starling's Eggs Found on the Lawn?

If whole empty shells are meant an answer cannot be given without personal observation, for it is impossible to know by what agency the contents have vanished. Half shells indicate that the young have been hatched.

Can a Wasp Sting Only Once Before It Dies?

The wasp's sting is barbed, and it may remain in the wound it inflicts. In that case the death of the insect follows. The wasp may sting several times if it manages to withdraw its poisonous weapon from its victim's flesh.

Why Do Poppies Grow in Wheat Fields?

The conditions of the soil of a wheat field are favourable to the germination of the seed of the poppy, and the manner in which corn grows affords the red flower a chance of life upon terms that do not make its competition impossible.

Is a Cricket Happy When It Sings?

We do not know that a cricket is happy when it sings at liberty. Its chirruping is taken to be, not a song of joy, but a call to its kind, though the wearisome repetition of the sound suggests that the continuous production of the note is often an instinctive process and not connected with any emotion.

Which British Bird is the Easiest to Tame?

Birds differ in temperament as much as human beings, so it is difficult to lay down a law. The tamest of captured birds is, of course, the robin, but as to wild things turned into a large open-air aviary, the writer's own experience causes him to remember with pleasure the confidence and friendship of a lesser redpoll.

Why Are Minnows So Numerous?

Because they obey the law to "be fruitful and multiply." Were it otherwise they would soon become extinct, for they are the prey of birds, water insects, every form of carnivorous freshwater fish, as well as of young gentlemen with nets. But as the little mother minnow lays up to 1000 eggs in the course of a season there is good hope that the numbers of the family will be maintained.

How do Corals Catch Their Food?

They lasso their prey with tentacles and waft it to their mouths. Some interesting experiments recently made by Dr. T. W. Vaughan in connection with the feeding of corals are described in My Magazine, the C.N. monthly for August.

## THE SUN A VARIABLE STAR

### HOW HIS LIGHT CHANGES FROM TIME TO TIME

#### Region of the Solar Cyclones

#### STORM AND CALM ON THE STARS

By Our Astronomical Correspondent

During next week by far the most prominent objects to be seen in the heavens will be the Sun and the Moon.

The Moon being near the full, her light will greatly obscure all other orbs in the night sky. But the Sun is, and has been, far more in evidence during the spring and summer of 1921 than for many years past, shining with exceptional brilliancy in cloudless skies for an abnormally long period.

Much careful research over nearly a hundred years has revealed one of the most remarkable stories of science—that our Sun is a variable star.

#### Periods of the Sun-storms

About a century ago an amateur astronomer, Schwabe of Dessau, studied the Sun for nearly 30 years, recording each day the number of Sun-spots visible. He found that between every 10 and 12 years these Sun-spots, or Sun-storms, reached a maximum of number and intensity. Continuous records ever since have proved this, and, further, that whereas only some 30 spots may occur in a minimum year, over 300 will occur in a maximum year.

It has been found that the minimum years occur about seven and a half years after the preceding maximum, while the next maximum comes four years after the minimum.

The last maximum period of Sun-spots occurred in 1916, so we are now approaching the minimum, which is anticipated in 1923 or 1924, when for many weeks not a spot will be visible.

Recent observations by the writer have revealed but one small spot—large enough, however, to engulf the Earth; and also a few scattered fragments, obviously the dying remains of a preceding storm.

#### Areas Free from Sun-Spots

It must not be supposed that these Sun-spots occur all over the Sun, for they do not; these solar cyclones only appear between certain latitudes, never farther north on the Sun than latitude 40 degrees from the Sun's equator, and the same distance south of his equator.

This means that if we imagine the Sun to be the Earth no Sun-spots would occur farther north than the south of Spain, Sicily, or Greece in Europe, or Washington in America; while south of our equator Africa, Australia, and South America, with the exception of Patagonia, would be within the zone of Sun-spots, but no regions farther south.

It is easy to understand that a large number of Sun-spots, such as occurred during 1915, 1916, and 1917, must make a difference to the amount of light that the Sun pours out into space, though, owing to the great quantity and intensity of his light, it is not readily perceptible to ordinary vision.

#### Dark Worlds that Shut off Starlight

Now, as this variation comes at regular intervals, we see that our Sun is really a variable star.

There are between two and three thousand variable stars known today whose periods of fluctuation have been measured more or less definitely, and large numbers are constantly being discovered, with the result that the belief is gaining ground that all stars, which, of course, are suns, are more or less variable, with periods of maximum disturbance followed by a calm period.

Of course, many variable stars doubtless have their periods of minimum brightness complicated by the presence of dark worlds, like our own only larger, revolving round them, which, by passing between us and their central sun, still further reduce their light. G. F. M.



# A MESSAGE FROM SPACE

A Thrilling Story of Flying Adventures  
Telling How Mars Saved the Earth

Told by  
GEORGE  
GOODCHILD

## CHAPTER 41

### Home Again!

THEY saw the huge hangar like a vast mountain in the distance. Everywhere were people—a sea of faces—cheering and waving.

The vessel dived down, and two of her engines were cut off, then another, until they were drifting at a bare few knots over the hangar.

A bell sounded, and the guidelines were flung overboard. A crowd of figures ran to pick them up. In two minutes the vessel came to a standstill and was moored.

Their great job was to evade the newspaper men. There seemed to be hundreds of them, all anxious for news. They got very little, for the crew, without exception, were longing to see their own people again. Some of them found their wives and children among the crowds, and there were many touching scenes.

"What are we going to do now?" asked Rolf of Tom.

Tom shook his head and looked significantly at Robert. The same thought was in the minds of both. They had no need to express it, for Robert came forward to them.

"We've had a wonderful experience," he said, "and the best thing is to escape before the press reporters make our lives a misery. I guess you two are thinking of home—eh?"

They nodded.

"Well, vanish now. I'd like to be coming with you, but I shall be wanted here for a few days to make reports. I'll come down to you later."

They bolted, and pushed their way through the crowd and out of the aerodrome. In less than two hours they were in the train bound for Devonshire.

They stepped out of the train at Exeter and found, to their amazement, Ida and Joan waiting for them with the jingle.

"Tom!" ejaculated Joan.

"Joan! How did you know? I forgot to send you a wire."

"Of course you did!" said Joan.

"But uncle Bob didn't forget."

"But I thought you'd be at school?"

"So I was yesterday. Ida came to fetch me."

Tom turned to Ida and shook hands in an embarrassed fashion. He still felt his old nervousness in her presence.

"When I heard that the Dragon-Fly was returning, from the dead as it were, I rushed off to the school and saw the Head Mistress. I guessed you would like to see Joan again."

Joan was staring at Tom with merriment in her eyes.

"Who ever persuaded you to grow a moustache?" she asked.

Tom went as red as a beetroot, and looked as though he would like to shake her. He made futile attempts to cover up the few stray hairs on his upper lip. Ida smiled, and then they laughed heartily and began to talk about the past.

They all dined that evening at the home of the Chudds, and the two boys heard how all hope had been abandoned a few months after the vessel had disappeared.

They, on their part, told wonderful stories of the Riobamians, which caused amazement in the faces of their listeners. Tom purposely said nothing about the most extraordinary event of all, for fear of reviving a subject that he thought might be painful to Rolf.

To his surprise Rolf told the whole story himself, not forgetting his own miserable part of the affair. Later, Ida interrogated him.

"What ever made you do such a mean thing?" she asked.

"I don't know—ridiculous jealousy, I suppose. But Tom has been an absolute brick. He saved my life at tremendous risk of his own. I didn't tell you this at dinner because he doesn't like me to mention it. And I thought he was vain and conceited."

"That shows what an undiscerning person you were. I knew he wasn't. Joan was terribly upset when she believed he was dead."

Joan, in the meantime, was telling Tom about Ida.

"I love her," she said. "And so will you when you know how splendid she has been to me. She and her mother were determined to adopt me; but they didn't know that Uncle Bob had left a will leaving everything to me."

"What!"

"Yes; the will was about to be proved when we got the glorious news. And now it's all come right, and I'm simply bursting with happiness."

To prove it she suddenly kissed him.

"Don't," he said. "Be as happy as you like, but don't slobber."

Robert Breckneck came down to swell the party. No one would have recognised in him the rather austere skipper of the Dragon-Fly. He was brimful of the adventurous spirit, and dragged off the trio on excursions into the wilds of Dartmoor and Exmoor. Under his tutelage Tom managed to catch the old pike in the garden pond. They had it stuffed and mounted and placed in the hall.

## CHAPTER 42

### Professor Rumminger

IN the meantime the newspapers were full of the extraordinary cruise of the Dragon-Fly. Scientists wrangled over the published records of the messages from Mars, and learned societies met to discuss the matter. Most of the credit went to Tom, for it was considered that only by his invention did communication become possible.

He found himself famous. Hennessee, in London, had not been idle. He had interviewed a leading manufacturing firm of wireless apparatus and had enlarged upon the miraculous working of Tom's invention. The result was a summons to London with a view to selling the patent.

"What shall I do?" he asked.

"Go," said Robert. "If you like I will come with you and act for you. The invention is worth a lot of money, and you may need a little advice."

Later in the day an idea occurred to Tom.

"I'd like to take Joan," he said.

"She has never been to London, and the sights will amaze her."

"Good idea!" applauded Robert. "Let us all go, Rolf and Ida too. We shall make quite a merry party."

And so the next day found them in the metropolis. Tom's interview with the engineering firm was highly successful. An agreement was drawn up there and then, guaranteeing him a considerable sum of money in consideration of his disposing of the rights in the new wireless invention.

On his part he undertook to make and deliver to them a model of the apparatus within two months.

"A very profitable transaction," said Robert. "You can afford to enjoy yourselves for a few days. I can put you all up at my house; it will be more comfortable than a hotel. Where will you do the work on the model?"

"I'd like to use my old workshop in the house, if I may."

"Certainly. I'd like nothing better. Now I have important work to do. You young people had

better run along and have a good time."

Joan's blue eyes shone with excitement. This new world dazzled and bewildered her. The endless shops, with their wonderful luxuries, made her speechless.

"It's marvellous," she whispered at last. "But I wouldn't like to live here for ever."

Tom made no reply. He was staring at the show bills outside a big hall. What he saw took his breath away. "Professor Rumminger discourses on the approaching end of the world," he read.

It came to him with a dreadful shock. The excitement of getting home had driven from his mind the warning from Mars. He remembered it now. He remembered, too, the paragraph in the Australian paper. This must be the very man.

"Come in here," he cried, dragging Joan by the arm.

"Oh, won't it be dry listening to a scientist talking?"

Tom was already inside the vestibule buying tickets. They entered the hall and found the lecture well advanced.

Rumminger was an old man with white side-whiskers. He spoke in tremulous tones, and illustrated his lecture by sketches on a board.

In three minutes Tom was engrossed. Rumminger, in the face of frequent sceptical interruptions, dogmatically asserted that he had discovered a mass of argon gas in space situated in the path of the earth's orbit.

"Tush!" shouted someone.

"Nothing can avert the catastrophe," said Rumminger, waving his wand. "On February 27 at noon we shall enter the gas. By six o'clock we shall—"

A loud interruption took place. Two men were ejected, and the lecturer continued. A section of the audience was clearly impressed, but there was a strong opposition, chiefly from his brother scientists.

"Seems a little mad, doesn't he?" said Rolf.

"I don't understand it," said Ida. "What do you make of it, Tom?"

But Tom was in no state to give a reply. He believed this queer old man. Something within him whispered that there was a close connection between this alarming prophecy and the message from Mars.

The lecture ended in an uproar. Newspaper reporters grinned as they pushed their way out, and thought of the funny story they would make of this.

Tom, with white face, struggled through the crowd. He lost sight of his companions, and, emerging upon the street, sought the side door which led to behind the hall. His one idea was to find the lecturer.

He opened the door and was about to enter when the old man almost fell into him.

"Another newspaper man!" he muttered.

"No, I'm not," gasped Tom. "My name is Breckneck—Tom Breckneck."

"The young man who communicated with Mars?"

"Yes. I heard what you said about the world coming to an end."

"And you think it's a fine joke—eh?"

"No, I don't," retorted Tom. "I know it's true, and I've got proof of it in my pocket."

The professor's eyes sparkled.

"That's my car—jump in, and come to my house. You're the first soul I've met who really believes it. I want to see your proofs."

## CHAPTER 43

### Tom Makes a Fortune

THEY arrived at Rumminger's house on Hampstead Heath.

Tom saw a fair-sized observatory in the garden and wondered if the professor would go in there. But Rumminger was a queer man and looked upon his observatory as a heaven in which no heathen foot should tread.

He showed Tom into the library and sat down. For a minute he said nothing, but passed a thin hand across his bald head.

"What did we come here for?" he asked suddenly. "And where on earth did I pick you up?"

Tom was amazed that anyone could have such a bad memory. He rightly took Rumminger to be something out of the ordinary.

"The lecture," prompted Tom. "I wanted to see you about that."

"Ah, yes! You said you had something to show me?"

"I have. You have seen the messages that came from Mars? They have been in all the papers."

"Have they?" mused the professor. "I've been so busy. I haven't noticed. Yes, yes, I remember—messages from Mars. You are Tom Breckneck. Now we are on solid ground."

Tom began to see why people thought Rumminger mad. He had a knack of totally forgetting things in a few minutes.

"Those messages came through me," said Tom.

"Yes! I know that."

"Well, there was one message that was never completed. The instrument broke down and was never put right again."

"Well?"

"Well, here is the uncompleted message. It may interest you."

Rumminger took the piece of paper and read it carefully. Then he read it again. On the third reading he banged the table with his fist.

"Has anyone seen this?"

"No. I was waiting until I could get the completion, but there seems little chance of getting that in time. The new instruments that will link up Mars again will take a long time to make."

"Don't show it to a soul," said Rumminger.

Tom stared at him.

"Why not?"

"Because they'd only laugh at you, as they laugh at me. You heard them today? I shall give no more lectures. I have tried to get them to prepare for the end, but they only laugh at me."

"But can't you prove your contentions?"

"No. The gas cannot even be seen. I located it by other means—by its actions on certain other bodies. Believe me, humanity is doomed—nothing can save it."

"But what do you make of this message?"

"Only that the Martians are much cleverer than my scientific friends and have, like myself, seen the approaching end."

TO BE CONTINUED

## Five-Minute Story

### The Feathered Nose

THE sugar cane harvest was over, and Mr. Richard Carruthers, instead of rejoicing in his huge profits, was one of the most worried men in Cuba.

His stuff was vanishing from the warehouse in an extraordinary way. By the time the motor trucks of the sugar buyers arrived in his remote district he looked like having as little to sell as he had had last year.

Tommy Carruthers, the owner's son, was thirteen years old, and keener than many a man. He offered to watch with the others, but his father would not allow him to take any part in the affair.

But this did not stop Tommy. He had become acquainted with a very old negro woman living in a shanty on the edge of the plantation. The blacks called her a witch, but Tommy, pitying her lonely condition, often brought her food or gave her a few cents.

Okandaga, as the witch was named, became fond of the English boy. When Tommy was refused his proper share of the detective work he told his troubles to his strange friend. The faded eyes of the old woman brightened strangely.

"Help me to your house, little one," she said, "and I will show you why my people call me a witch."

Slowly she hobbled along with Tommy's help. Tommy introduced her to his father and explained that she could discover the thief.

Mr. Carruthers did not believe she could do so, but he sat the old woman on a chair and called all his "hands" before her.

At her orders they walked slowly by her, one by one, and then stood in a circle around her chair. She made the foreman and his assistants directly face her. She put some strange herbs on the ground and lighted a little fire under them, and produced a sweet, sickly kind of smoke.

As the smoke blew in the men's faces the witch-woman crooned a quaint song in an African tongue.

Tommy fed the fire with some herbs, and the witch-woman's voice grew wilder and shriller. Suddenly she took a pail of water and flung it on the fire. The thick smoke died away. With piercing eyes the old woman stared at the foreman, and said to Tommy: "You can tell the thief by the feather that I have made to grow on his nose."

Every negro's face was in its natural condition, but the black foreman at once put up his hand to his nose.

"You are the thief," screamed the witch.

She was right. The man confessed that he was leagued with a gang on the neighbouring plantation.

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# How Sweet the Roses Make the World



## DR. MERRYMAN

"SOANSO is one of those fellows who has more money than brains, is he not?" asked Brown of his friend Black.

"Yes; and he is not rich either," replied Black.

### Can You Find This?

It's seen in stone and dwells in wood;  
It shuns the bad but loves the good;  
It's often used when John is hurt;  
It shuns not gold, though it does dirt;  
It's seen in you, but not in me;  
And now its name you'll quickly see.

*Solution next week*

### Mistaken Identity



MRS. PORCUPINE: "Good gracious! What ever is my husband doing up there?"

### She Knew Better

SOMEONE wrote of the perils of starvation in case of greater trade depression, and said: "But we can save ourselves if we will." The typist, however, knew better. She made it run, "We can save ourselves if we fill." How true that is!

How many legs has a horse? - Six. He has fore (four) legs in front and two behind.

### A Mighty Hunter

"I'm going out a-hunting,  
I'm going to have some fun,  
But there will be no danger,  
Although I have a gun.  
Storks, pigeons, and canaries  
I'll bring home without fail;  
For I'll load my trusty gun with salt,  
And shoot them on the tail!"

Of what trade is the sun?  
A tanner.

### Do You Live in Milford Lane?

MANY towns have a thoroughfare near a river that goes by the name of Milford, and in the old days there was a ford across the stream, and close by stood either a wind-mill or a water-mill.

**A Very Long Day**  
AN owl who had found an arc light, Thought, "The sun's still exceedingly bright," Then he made the remark, "I can't hunt till it's dark." So he stayed there the whole of the night.

**WHY** should tramcars and omnibuses never be damaged by lightning?  
Because they each have a conductor.

### Arithmetical Problem

I AM a word of four letters. Multiply my fourth by two and you have my first; divide my first by 20 and you have my third; divide my third by 50 and you have my second; multiply my third by 10 and you have my fourth. What word am I? *Solution next week*

### After the Drought

QUACKED a duck in a thunderstorm, "I Feel exceedingly happy—and why? My umbrella's at home, So uncovered I roam, And forget that I ever was dry!"

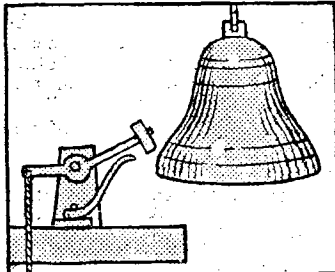
### Mildred's and Mary's Nature Notes

#### The Earwig

ALTHOUGH the earwig may appear To little folk a thing to dread;  
She will not scurry down your ear And rear a family in your head.  
Her rampant attitude behind Is just an earwig's little way—  
A clever subterfuge designed To frighten anything it may.  
Of course, her nippers are to trim Hersprouting wings, and not to nip;  
But since they look so fierce and grim She's learned a rather useful tip,  
And rears her tail in dreadful style To try to make us overawed;  
But those who know her only smile At such a perfect little fraud.

### PICTURES THAT ANSWER QUESTIONS

#### How is a Church Bell Rung?



The most common method is by a hammer, operated by a rope, the striker being lifted off the bell again by means of a spring.

### ANSWERS TO LAST WEEK'S PUZZLES

Dropped Letter: Negro, Nero.  
What Birds Are These? Knot and Nightjar.  
The Private School: There were 28 pupils.  
Who Was He?  
The Poet and Courtier was Geoffrey Chaucer.

## Jacko Makes a Discovery

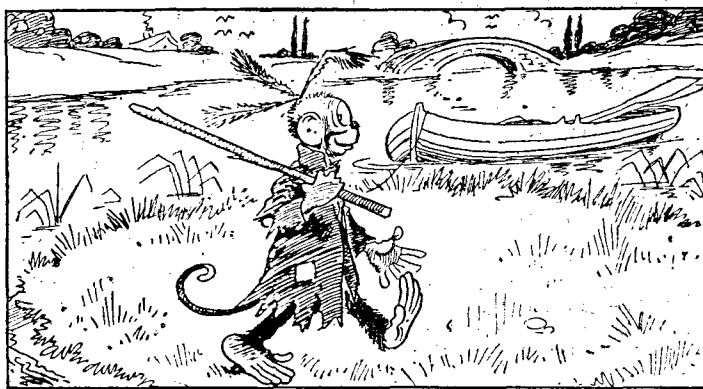
It was all very well for his uncle to send him home; Jacko had other ideas for himself. He knew the sort of reception he was likely to get, and he meant to put off the evil day as long as possible!

While he was wondering where he should go he caught sight of the river. It looked very inviting, and Jacko wandered down to it. At the water's edge lay the boat he had been clever enough to pitch the little girl out of only a few days before.

He stepped in and rowed off down-stream.

"This isn't half bad," he murmured. "I wonder where it leads to?"

It seemed to go on for miles, winding in and out between meadows and fields of waving corn. And then, round a bend,



He shouldered a great stick and went off singing

a bridge came suddenly into sight; and beyond the bridge the river widened into two streams. When Jacko got up to it he found that the land between was an island.

"Coo!" he cried. "Suits me down to the ground."

He rowed up to it, jumped ashore, and went off to explore.

It didn't take long, for a tinier island he had never seen. There was nothing in it but bushes and a few trees. But it suggested endless possibilities to Jacko, and he wished with all his heart that he had some of his schoolfellows with him.

In the undergrowth he found a deserted nest with some long feathers in it. He pulled one out and stuck it in his hair. That gave him an idea. He would dress up and play Robinson Crusoe.

He made a splendid headdress; but he wasn't altogether pleased with his clothes.

He looked round. Across the water he spied a scarecrow in a field. It didn't take him long to get there, pull off the coat, and put it on. Then he shouldered a great stick, and went round the island singing at the top of his voice.

It was the singing that gave him away. One of the farm men heard him and saw him, and roared out to him to come back.

"Come and fetch me!" shouted Jacko.

The man shook his fist at him, and went off to tell his uncle. Whereupon his uncle, wondering what fresh mischief he was up to, got another boat and came after him.

Jacko groaned. "Just my luck!" he muttered.

When his uncle asked him what he thought he was doing he said, "Only having a game."

"A game indeed!" roared his uncle. "You are the plague of my life! I shall have no peace till you are safely in your father's charge. Now, you just get off to the station right away."

"Haden't I better take the boat back first?" asked Master Jacko meekly.

"Well, go ahead then," he was told.

Jacko went. But when he was far enough ahead, he landed on the opposite bank, and ran off across the fields.

## Tales Before Bedtime

## John Alters His Mind

JOHN sat in the drawing-room perched on a high stool before the piano. He wasn't playing—he was just drumming noisily on the keys.

His mother passed the door and looked in.

"That will do, John," she said. "I can't have the piano spoilt."

"I hate practising," John burst out. "What's the use of it?" and he brought his fists down with such a bang that his mother cried sharply, "You are a naughty boy."

John went slowly out of the house. In the meadow the hay was gathered into a little rick. With the aid of a ladder John climbed to the top.

And then, somehow, he leaned over and lost his balance and fell!

Luckily he fell on soft ground or it might have been worse. As it was it was bad enough, for in falling he twisted his leg and broke it.

For weeks he had to lie with it all stiff and bandaged. He couldn't play games, and he soon got tired of reading. They were all splendid—even the lame boy next door came in to amuse him. But with it all John was terribly lonely.

His little chubby face was growing longer and longer when one morning he heard the sound of a piano. It came from next door, and as the windows were open he could hear the tunes quite plainly.

Such jolly tunes they were! John loved them. They made him feel quite happy again.

At last they stopped, and presently the lame boy came



John climbed to the top

across the lawn and looked in at John's window.

"Was it you playing?" asked John.

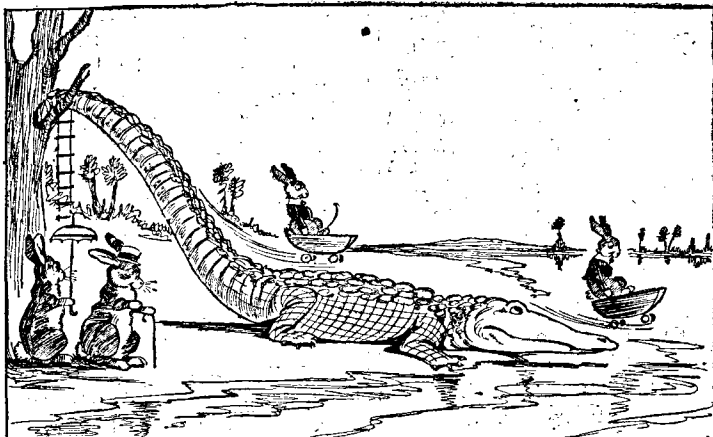
The lame boy nodded. "I thought it might cheer you up," he said.

"It did," said John. "It was splendid of you. I wish I could play like that."

"It's only a matter of practising long enough," said the lame boy.

"Is it?" said John. And that night, when his mother came in to tuck him up, he said, "When I get well I'm going to practise like mad."

## The Adventures of the Rabbit Family



Mr. Crocodile kindly provides a water-chute

## Notes and Queries

**What is an A.B.?** An able-bodied seaman, one who is skilled in seamanship.

**What is Verbiage?** Wordiness. It comes from the French verbe, meaning a word.

**What is an Actuary?** An official of a life insurance company who works out the probable duration of life of persons and advises generally on statistics and finance.

**What is a Figured Harmony?** The musical term used where one or more parts of a composition move during the continuance of a chord through certain notes that do not form any of the parts of that chord.

## Ici on Parle Français



Une enclume Un poussin Une luge  
Le forgeron frappe sur l'enclume  
Ce petit poussin vient de naître  
La luge glisse vite sur la neige



Le verrou Un ours Une ambulance  
La porte est fermée au verrou  
L'ours blanc vit dans les glaces  
L'ambulance emporte les blessés



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## AT SCHOOL IN THE SEA • QUEER RAILWAY RACE • THE HAPPY LABOURER



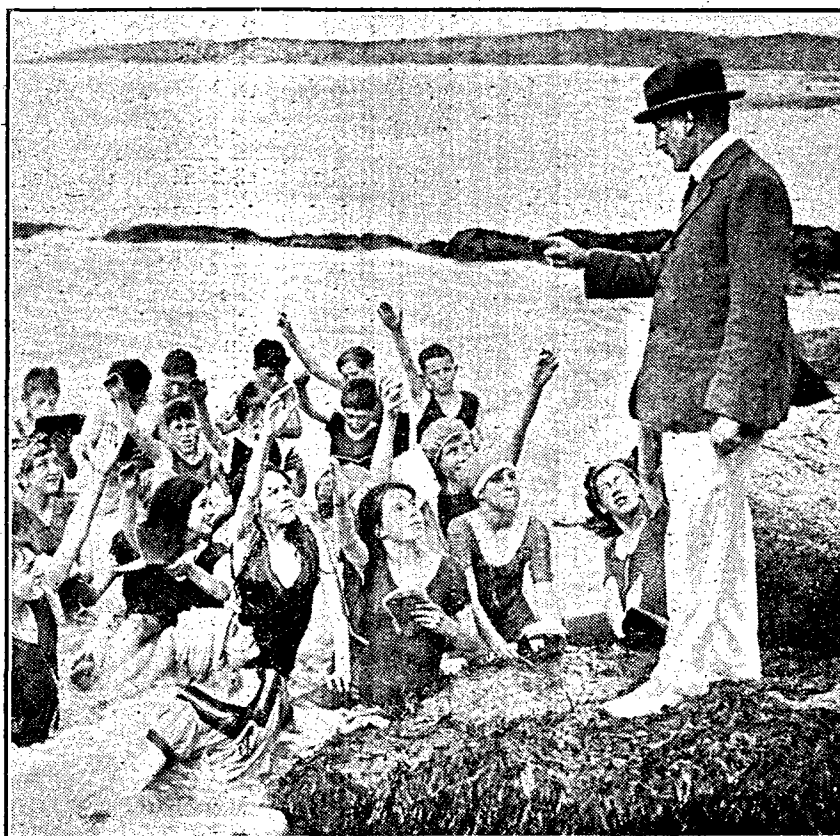
The Yachts Start Off in Fine Style—The start of the open handicap races on the last day of the Royal Temple Yacht Club's regatta at Ramsgate.



Town and Country Meet in the Park—An interesting snapshot taken in Richmond Park, near London, where a nature-loving motorist stopped to feed the deer.



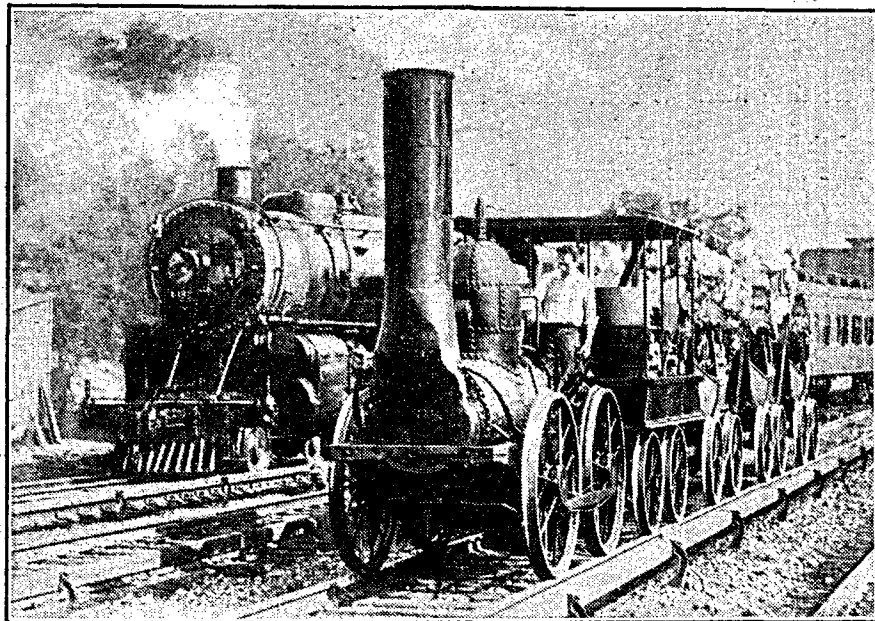
Off for the Holidays—A happy party of children leaving London for their summer holiday at the seaside. They are smiling good-bye to their friends on the platform as they go off.



Scholars Keep Cool in the Sea—A class of boys and girls belonging to a school at Freshwater, in the Isle of Wight, kept cool during the hot weather by having lessons while they sat in the surf. The master stood on the rocks, as shown here.



A Man Who Loves His Work—Labourer J. Smith, who, although he has been dismissed with a gratuity, continues to work for nothing for the City of Johannesburg. See page 3.



The Old and the New—The 20th Century Limited Express on the New York to Chicago Railway and the De Witt Clinton engine of 1831, the first to run on the Mohawk and Hudson Railway, which are shortly to run a race in America.



Happy Sir John—Sir John Kirk, spreader of happiness among poor children everywhere, has a happy day at Arthur's Home, in Bognor, where the Shaftesbury Society entertains London children.